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THIS IS A COLLECTION OF SPEECHES THAT EXAMINE CURRENT ISSUES AND TRENDS IN EDUCATION AS THEY RELATE TO ITV. TOPICS DISCUSSED INCLUDE THE STATUS OF ITV, CURRICULUM AND ORGANIZATION PATTERNS, HISTORY, ACCOMPLISHMENTS, AND UTILIZATION OF THE SERVICES OF THE METROPOLITAN AREA COUNCIL FOR ITV RESOURCES, AN FCC COMMISSIONER'S VIEWS OF ITV, COOPERATIVE APPROACHES TO LOCAL, REGIONAL, AND NATIONAL ITV PROGRAMING, BUSINESS COMMUNITY RESOURCES, PROGRAMING STANDARDS AND RESEARCH, AND EDUCATION IN AMERICAN SAMOA. ALSO INCLUDED IS A CONFERENCE SUMMARY AND LOOK TOWARD THE FUTURE. A LIST OF PARTICIPANTS IS APPENDED. THIS DOCUMENT IS AVAILABLE FOR $3.00 FROM EDUCATIONAL MEDIA COUNCIL INC., 1346 CONNECTICUT AVE., N.W., WASHINGTON, D.C. (JM)

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NEW RELATIONSHIPS IN ITV

The Educational Media Council

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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NEW RELATIONSHIPS IN INSTRUCTIONAL TELEVISION

Proceedings of the Conference

Jointly Sponsored By

The Education Section
of the Electronic Industries Association

and

The Instructional Division
of the National Association of Educational Broadcasters

in cooperation with

The Educational Media Council

April 18-20, 1967

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FOREWARD

This is a report on a conference that was extraordinary in several ways.

Just an hour before the first morning session on "New Relationships in ITV" in a room off the lobby of one of the best hotels in New York City, the hotel lobby was awash under four feet of water. Having promptly established some fine new relationships with resourceful hotel staff and municipal flood-control troops, the conferees convened with soggy soles and not-so-dry humor for a session described by one of them as "damp good". But in spite of this and other unscheduled "happenings" that enlivened the proceedings, this conference was in no sense unstructured. It had, in fact, two structures.

One was very explicitly defined in the program of the conference and in the pre-announced statement of its purpose: to "examine in detail some of the central issues of education today along with major trends in educational processes which must be fully understood before instructional television in any form can even be considered ... a true working conference involving education and industry in shirt-sleeve discussions". In line with these objectives the conference was planned in such a way that two groups which had never before essayed a full-scale national interface, the Education Section of the Electronic Industries Association and the Instructional Division of the National Association of Educational Broadcasters, joined together in a series of topical panel discussions, each followed by three (or, in the case of the final general session, six) concurrent work sessions, which in turn broke up into small-group buzz sessions. The three-day conference of course also provided plenty of intermission opportunities for establishing new relationships during its luncheons, receptions, banquet, coffee breaks -- and those long, long waits for the elevators.

In its second structure, the conference was an heuristic component of a larger design. It was planned and executed under a mandate from the Educational Media Council at its 21st Meeting in November of 1966, during which plans were laid for a self-study of the Council as a model educational forum, consultant, and dissemination agency, to be conducted

under a contract with the United States Office of Education. The "New Relationships in ITV" Conference was designed as the first implementation of a decision to undertake a series of national topical symposia jointly sponsored by two or more EMC Member organizations. Through the functioning of the Council as secretariat, therefore, the scope of the conference actually comprised the interests and participation, in varying degrees, of the entire EMC Membership of fifteen major national associations severally concerned with the full range of educational media:

American Book Publishers Council
American Library Association
American Textbook Publishers Institute
Association for Supervision and Curriculum Development
Department of Audiovisual Instruction, NEA
Educational Film Library Association
Electronics Industries Association
National Association of Educational Broadcasters
National Audio-Visual Association
National Center for School and College Television
National Educational Television
National Society for Programmed Instruction

National University Extension Association
Society of Motion Picture and Television Engineers
University Film Producers Association

Although the concern of some EMC Member organizations for the problems of instructional television might be assumed to be minimal, the very fact of Membership in the Council bears witness to an organization's sensibility of the importance of all media in education, and of the need for better channels of communication among all groups involved with the more creative production, improved distribution, and more effective use of media. According to the Minutes of the 21st EMC Meeting, when the Council worked out plans for its first experimental joint conference, "Instructional Television was chosen as the first topic because it has been the most discussed and the one with which there has been most dissatisfaction." No medium is an island, and even a suggestion of bell-tolling is abhorrent to the practitioners of all.

So, to all Members of the Council -- and to the 250,000 professional individuals of their combined constituencies -- this conference was of interest per se, and also as an experiment, a pilot research project in EMC's current effort to find new and better ways of serving the educational community through development of its own forum and dissemination functions. Of this publication of the conference proceedings, it is therefore a pleasure for the Council to acknowledge -- with appreciation for the way in which the staff of the Office of Education has shared and supported that interest -- that the research reported herein was performed pursuant to a contract with the United States Department of Health, Education, and Welfare.

Throughout the planning stages of the "New Relationships in ITV" Conference an EMC Committee headed by Council President William Harley was available to assist the conference chairmen and staff. Charles Schuller, who in 1960 was the first elected Chairman of the Council, served as chairman for an EMC Conference Evaluation Committee which monitored all sessions of the conference and met for a final summary session of its own on the following day. This Committee subsequently presented to the Council a detailed report that was both an evaluation of the ITV conference itself and an assessment of the value of EMC's role in this conference and in possible future jointly sponsored conferences. Since the Evaluation Committee judged the ITV Conference to be generally successful, and strongly endorsed the Council's role as a conference-generating and-sponsoring agency, EMC has proceeded to

program extension of its forum function on the basis of the Committee's specific recommendations; and plans for the second national symposium are now in work.

One of the Recorders for a final conference session of the ITV Conference noted general approval for a statement by one conferee, who said that a great virtue of the conference had been the fact that it was not sponsored by any one organization. It seems clear that a dialogue between two groups who had had only sporadic communication was at

least begun, and that this might not have happened under any other circumstances. It is the hope of the Educational Media Council that this dialogue between representatives of the electronics industry and of instructional television will continue and become firmly established -- to the advantage of both groups and for the benefit of American education.

As for the "New Relationships in ITV" Conference -- it here speaks for itself. Because the tape recorder is not a servomechanism, in the following pages we offer in evidence clear documentation of the fact that instructional television -- as a topic and as an educational medium -- can indeed be at once informative, challenging, significant, and entertaining. The Educational Media Council takes pride in having been able to be a catalytic agent in the assembling of so much wit and wisdom.

Harriet Lundgaard
Executive Director
Educational Media Council

PRODUCTION CREDITS

Among the most rewarding (and most congenial) "new relationships in ITV" were the still-continuing ones established among individual members of the several organizations and groups which worked together in planning, managing, and evaluating this conference. So many people helped that almost every name on the list of conference registrants deserves a star -- MACITVR members whose assistance with logistics added a special dimension to their conference-planning and hospitality functions; individual members of NAEB and EIA who served as chairmen and recorders for the Work and Buzz Sessions; and many others who made very important contributions ranging from change for a quarter to that first question from the floor that gets a good discussion going.

Special credit and appreciation for the success of the conference must be accorded, however, to:

Richard H. Bell, Conference Chairman, who as Executive Director of the Instructional Division of NAEB at the time of the inception of the conference in 1966, and as Corporate Education Counsel for an EIA member, the Ampex Corporation, at the actual time of the conference in 1967, was uniquely qualified, both personally and professionally, for his complex assignment.

James R. Collier, Co-Chairman, who as Chairman of the Education Section of EIA and Director for Commercial Development of the Raytheon Company, was also bilingual in the conference dialogue between representatives of education and industry.

The Metropolitan Area Council for Instructional Television Resources, New York City hosts for the conference, and especially the MACITVR Co-Chairmen for Planning -- Robert P. Crawford, James F. Macandrew, Richard J. Meyer, and Florence Monroe -- and Arnold Markowitz, of Channel 25/WNYE-TV, whose faithful tape-recording of all general sessions made this playback possible.

F. Borden Mace, Conference Coordinator, Managing Director of the Visual Programs Center of the Sterling Institute, through whose energy and good will a quadruplex transmission was converted into an integrated, on-schedule, and very live production.

William G. Harley, who as President of EMC and Chairman of its Planning Committee for this conference (as well as President of NAEB), benignly EMC'd both the proceedings preceding the conference and the succeeding -- and successful -- event.

Charles F. Schuller, Director of the Instructional Media Center of Michigan State University, who as Chairman of the EMC Conference Evaluation Committee, skillfully developed a constructive analysis of the conference as a pilot for a continuing series -- in which task he was substantially assisted by four EMC Member representatives, Richard Brown, ASCD; Edwin Cohen, NCSCT; Ben Edelman, EIA; William Harley, NAEB; and EMC Member-at-Large Kenneth Komoski.

Secretariat to the Secretariat -- Evelyn Contezac, Frances Contrino, Peggy Dinneen, and Dolores Wimmer, who between the first planning session for this conference and the last page of its published report made invaluable contributions of good work and good humor with ultra-high frequency.

CONFERENCE SPEAKERS

NEIL H. ANDERSON, Executive Vice President, New York Board of Trade, Inc.

GEORGE E. BAIR, Educational Director, South Carolina ETV Network

RICHARD H. BELL, Corporate Education Counsel, Ampex Corporation

M. VIRGINIA BIGGY, Director of Instructional TV, Eastern Education Network

LESLEE J. BISHOP, Executive Secretary, Association for Supervision and Curriculum Development

RICHARD V. BROWN, Associate Secretary, Association for Supervision and Curriculum Development

KENNETH B. CLARK, Director, Metropolitan Applied Research Corporation

JAMES R. COLLIER, Director, Commercial Business Development, Raytheon Corporation

EDWIN G. COHEN, Executive Director, National Center for School and College Television

ROBERT P. CRAWFORD, Director, Center for Radio-Television, Queens College

REV. JOHN M. CULKIN, Director, Center for Communications, Fordham University

EMMANUEL H. DEMBY, President, Motivational Programmers, Inc.

JAMES A. FELLOWS, Assistant to the President, National Association of Educational Broadcasters

HAROLD B. GORES, President, Educational Facilities Laboratories

WILLIAM G. HARLEY, President, National Association of Educational Broadcasters

ROBERT L. HILLIARD, Chief, Educational Broadcasting Branch, Federal Communications Commission

P. KENNETH KOMOSKI, Director, Educational Products Information Exchange

J.C.R. LICKLIDER, Consultant to the IBM Director of Research; Visiting Professor, Massachusetts Institute of Technology

EDWARD MALTZMAN, Director of Educational Research, Sylvania Products, Inc.

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LEWIS A. RHODES, Director, National Project for Improvement of Instruction by Television, NAEB
HENRY SENBER, News Manager of Radio-TV, Public Relations Department, New York Telephone Company
NILS WESSELL, President, Institute for Educational Development

THE STATUS OF INSTRUCTIONAL TELEVISION - 1967

An Introduction to the EIA-NAEB Conference on ITV, Written After the Fact

Richard H. Bell, Conference Chairman

Had an introduction such as this prefaced the joint EIA-NAEB Conference devoted to consideration of "New Relationships in ITV" held in New York City in April, 1967, perhaps there would have been fewer voices raising the questions, "Where does ITV stand today? Aren't we doing anything right?" during that conference.

At the time the conference (which was also, insofar as NAEB was concerned, the fifth annual national ITV conference) was planned, it was felt that -- in light of the Fund For Advancement of Education publication Learning by Television and other then recent publications on the subject -- those attending the conference would already have an overview of where we stood, and would wish to focus their attention on "How well have we done what has been done?" and "Where do we go from here?" It is hoped by the sponsoring organizations that the conference did deal with some degree of success with these two questions.

In light of the frequency with which the question of the current status of ITV was raised in New York, it was felt that a post-conference introductory statement on this subject would be appropriate to include in the published report of the proceedings.

Included herein, then, is one person's view of ITV, influenced by events which have taken place since the conference, seen through the eyes of a single professional in the field of instructional television, and viewed, it is hoped, with some degree of objectivity.

Semantically, instructional television is, and has been, an anomaly. Often equated with closed-circuit television, instructional television is being carried on by most of the broadcast educational television stations in the country.

RICHARD H. BELL

Given a name, and a separate structure of its own, instructional television is increasingly becoming an integral part of educational technology. Possessing historical and organizational ties with the educational sub-structure of ETV, instructional television seeks to be identified closely with the formal educational community. Claiming an intrinsic professional status for instructional television, its practitioners come from the fields of curriculum, audio-visual instruction, professional broadcasting, commercial broadcasting, classroom teaching, subject-area disciplines, systems technology, and engineering. Little wonder, then, that underlying the question "What is the status of ITV?" is the more fundamental question "What is ITV?"

Quantitatively, the situation is not much clearer. A soon-to-be-completed study of closed-circuit television by the Department of Audio-visual Instruction, NEA, will document the existence of some 700 to 1,000 such systems in American education. Almost without exception, such systems are devoted in some degree to instruction. Of the 136 educational television stations now on the air, 130 are carrying programs designed for instructional use in the schools. Studies indicate that perhaps 10,000,000 learners in elementary and secondary education now receive at least part of their instruction through the television medium in some form. Such figures give some indication of the size and scope of instructional television today.

So it can be said that although precise definitions are lacking (and perhaps impossible to achieve in the present fluid state of a rapidly changing technology), there is a fairly widespread use being made of television technology in various aspects of the instructional process.

As is often the case, it is easier to say what ITV is not than what it is. It is not the general cultural and informational program broadcast by educational or commercial television stations for home consumption during the evening hours. It is not the informational potpourri program broadcast in the form of quizzes by commercial stations during the daytime hours. It is not solely an assortment or system of programs designed as an integral part of a school curriculum. In fact, it may not be ITV at all -- but, rather, video technology as applied to the teaching-learning process.

Probably consensus could be obtained on these premises:

THE STATUS OF INSTRUCTIONAL TELEVISION - 1967

1. Instructional television is the use of what we call the television medium for the achievement of systematic, developmental instructional goals.

2. Instructional television presupposes that a learner is brought into contact with resource material through the television tube, regardless of how it is transmitted.

3. Instructional television encompasses the use of television for direct instruction, total television teaching, complementary use, and enrichment so long as the material presented is part of a purposeful instructional process.

4. Instructional television can be used with persons of all ages -- from pre-schoolers to the elderly.

Beyond these four elemental premises we might have difficulty in coming to ageeement. Proceeding therefore, with the attempt to define the current status of instructional television, one individual may cite the following assumptions as his own -- and also, in his opinion and experience, those of considerable numbers of his professional colleagues.

A. Instructional television is established, but not well established, in American education today. Two reasons for this are that:

   1. Television has not become an essential part of the teaching-learning process as we know it today. It is still on the fringes of instruction, in the thinking of teachers, in the budgeting of educational institutions, and in the planning of educational psychologists and curriculum innovators. We are seeking to establish ITV in the present system of education, while realizing that it can play a more important role in education as and if education changes.

   2. ITV has not yet been given the national publicity of educational, or public television for a variety of reasons. As a result, there have been relatively few national foundations launching major programs in ITV, there has been almost no federal legislation devoted specifically to instructional television, there has been no one national organization devoted totally to instructional television.

(Note that this is descriptive of the situation, and no judgments are passed here as to whether these things should or should not come to pass.)

B. ITV is being widely used, and its use is increasing. The practitioners of ITV have used it in a variety of ways in the educative process, and with varying degrees of success. This success much be measured in terms of the existing situation. When a traditional classroom situation is transmitted into a classroom where no qualified teacher is available, the use of television obviously increases the chances of learning in that classroom. It is generally conceded, however, that the best uses of instructional television are yet to be made.

C. As a corolary to the preceding point, the most effective formats for learning from television have not as yet been developed. Within the past two years, instructional television in many school situations has grown from concern with obtaining the facilities for ITV to concern with what is done with the medium. Experimentation with new techniques of instructional television is increasing.

Despite the current experimentation, surveys by NCSCT and others indicate that much instructional television consists of the multiplication and dissemination of existing classroom teaching, with too little attention being paid to development of instructional formats uniquely suited to the television medium.

D. Instructional television has attracted the interest and the activities of individuals who are primarily educators, and secondarily technologists, businessmen, or broadcasters. Less concerned with fund-raising, FCC relations, and technical matters than the ETV administrator, today's ITV practitioner is focusing his attention on the teacher-learning process and the way in which the television medium relates to that process.

E. Increasingly, instructional television is being thought of, not as a separate field, but as an integral part of the emerging field of instructional technology. We are becoming more involved with video technology in education, and less with television as it has been known in the past. The remote random access systems are using audio and video outputs for individualized instruction. Computer-assisted instruction often uses a cathode ray tube as an output mechanism. In these uses television loses its identity as ITV, and becomes part of an educational systems approach. As this occurs, there is a widening gulf between the functions of the ETV station and the ITV operation. With the addition of 2500 mHz to closed-circuit and CATV systems, educational institutions are seeking to solve their scheduling problems through multiple transmissions which are controlled by the recipient as opposed to broadcast transmissions where the time of transmission is set by the disseminator.

F. Although industry is moving into education, there have been few major efforts on the part of any textbook publishers or educational film producers to produce any significant amount of learning materials in an instructional television format.

There is increasing willingness of the part of schools to accept learning materials from "outside" their own operations -- if these materials "fit our curriculum" and "are of high quality". School administrators, through a variety of channels, are seeking ways to reduce the escalation of educational costs through cooperative use of expensive equipment and materials.

Coupling the two forgoing ideas, there is a gradual exploration of the question of instructional television programmic material. Who will be the producers? Who will be the users? And how will they be related?

This review has not attempted to describe in detail the ITV terrain, but has been written to indicate our present position on the map, with some speculation on the nature of the road ahead. The report of the EIA-NAEB "New Relationships in ITV" Conference set forth in the following pages posts many signs to speed and guide us on our journey.

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UNSTRUCTURING EDUCATION

Kenneth B. Clark
George E. Probst
John M. Culkin, S.J.

Presiding, William G. Harley:

Among the numerous ritualistic responsibilities of presidents of organizations is that of opening things, cutting the ribbons, taking off the wrappings, and lifting the lid. And this is especially exhilarating if you happen to know something about what's inside, but on the other hand are not quite certain of how it is going to turn out in its finished form. In responding to this particular situation this evening, since I happen to be President of two organizations, this is a double pleasure. I therefore take this double pleasure in greeting you, welcoming you, and thereby officially opening this conference on "New Relationships in Instructional Television". It is fifth in one lineage (in the sense that the NAEB has sponsored such meetings for five years); but in another lineage, it is first -- first in what we hope may be a series of annual meetings jointly sponsored by two or more members of the Educational Media Council. As you know, this meeting is co-sponsored by the Instructional Division of NAEB and by the Education Committee of the Electronics Industries Association, with the Educational Media Council serving as the secretariat. We hope that there may be continuing meetings of this nature in the future, bringing together representatives from business and education as they consider various aspects of the educational media field.

The genesis of this meeting came from Jim Collier, the chairman of the EIA Education Committee, who came to me one day in my role as President of EMC, and said that there were pressures from within industry to hold some kind of conference, to get those educators in and sit them down and say, "Now what is it you need? Tell us what you want and what you need." He said that they've done some of this in the past, and it wasn't too useful, because -- frankly -- the educators didn't know what they needed. And he suggested that a more appropriate approach might be one of joining together their combined expertise and experience and that might result in a much more valid prediction of what would be needed in the future in the way of educational technology.

This conference is the outcome of that preliminary exploration. In large measure, however, the success of this meeting is going to be up to you people as individuals, and the degree to which you fully participate. We announced that it was going to be a working conference, and we fully intend that it shall be. And we hope that besides getting some new understandings -- possibly cues toward further developments in educational technology and its application to education -- we may have some outcomes in terms of suggestions as to areas which will need further exploration and study ...

Another one of the ritualistic traditions at the opening of any conference like this is the reading of the inevitable telegram. We're somewhat inhibited in this situation since it was garbled in transmission. But a crew of translators has worked on it, and we think we have the gist of it. It's addressed to Conference Chairman Richard Bell:

> SHIRT-SLEEVES DISCUSSION BETWEEN THE PACESETTERS IN EDUCATION AND INNOVATORS IN INDUSTRY CAN HAVE THE MOST PROFOUNDLY BENEFICIAL EFFECT ON INNOVATIONS IN EXTENSION OF INSTRUCTIONAL TELEVISION. I WOULD APPRECIATE IT IF YOU WOULD CONVEY MY GREETINGS TO EVERY CONFERENCE PARTICIPANT. I CONGRATULATE THE INSTRUCTIONAL DIVISION OF THE NATIONAL ASSOCIATION OF EDUCATIONAL BROADCASTERS AND THE EDUCATION SECTION OF THE ELECTRONICS INDUSTRIES ASSOCIATION ON CO-SPONSORING THIS MEETING WITH THE EDUCATIONAL MEDIA COUNCIL.
>
> AS A FORMER TEACHER, I BELIEVE THAT WE HAVE HARDLY TOUCHED THE SURFACE OF TV'S IMMENSE POTENTIAL. I SEEK AS YOU DO FRANK

WILLIAM G. HARLEY

> FEEDBACK AND APPRAISAL AS TO THE EXPERIENCE TO DATE, AND THE ASKING OF HARD QUESTIONS AND THE GIVING OF FRANK ANSWERS WHICH ARE SO NECESSARY FOR SOLID PROGRESS. EDUCATION IN THE ELECTRONIC AGE REQUIRES THE USE OF BROADCAST FOR THE EDUCATIONALLY DISADVANTAGED AS WELL AS THE PHYSICALLY AND MENTALLY HANDICAPPED. BUT FOR ALL LEARNERS OF ALL INTELLECTUAL LEVELS AND FOR EVERY AGE BRACKET, IN THE COURSE OF LIFETIME LEARNING LET US WORK AS TRUE PARTNERS IN THIS EXCITING EDUCATIONAL ADVENTURE. BEST REGARDS.
>
> HUBERT H. HUMPHREY

We come now to the program for this evening in which we're to have three speakers. You notice on your schedule that this session is called "Unstructuring Education", designed deliberately to begin with an attempt to take the blinders off our traditional perceptions of education, knock down some of the walls, and open up our considerations to the wide and real-life range of educational developments and trends. It was our notion that, rather than talk first about television and what it can do about education, we might better look at education as it is today and as it attempts to grapple with the real problems confronting it; and then consider, on the basis of these perceptions, ways in which television may make a contribution.

Our lead-off speaker is a world-renowned expert in the field of Urban Sociology and Psychology, Dr. Kenneth Clark, Professor at the City University of New York. Dr. Clark is a member of the New York State Board of Regents. He is also Director of the Metropolitan Applied Research Corporation, a nonprofit organization established to study the effects of urban ghetto life and community action programs. This is a field in which Dr. Clark is an acknowledged authority, and it is a topic on which he has written profusely and spoken widely. We are honored to have as our first speaker this evening -- Dr. Kenneth Clark.

UNSTRUCTURING EDUCATION

KENNETH B. CLARK

I think it would be appropriate for me to first establish my credentials as an expert qualified to address this group involved in television. I believe I qualify as an expert on this problem because I know absolutely nothing about television. Its scientific and technical basis remains a major mystery and completely unexplained miracle to me. I presume that's redundant -- *unexplained* -- as qualification for a miracle. Every time I turn the button, it seems to be preposterous that anything should happen; and when I see what does happen, I'm *convinced* that it's preposterous.

I know nothing about commercial television -- its organization, its economics, its futile and seemingly cannibalistic search for talent, for intelligence. The only thing I know about commercial television is it seems to have an interminable number of commercials. But I know little or nothing about educational television. I know absolutely nothing about its relationship to commercial television, if any; whether commercial stations support or do not support, or consider educational television as competitive. I know very little about the quality of its producing and technical staff, or its problems with unions, if any. I know only that it's supposed to be free of commercials; and when I've watched it, it sometimes seems to match commercial television for general dullness and irrelevance. These, then, are my credentials for being considered an expert on the problem of relevance of educational television to contemporary educational urban and social problems. Given the unquestioned validity of these credentials of ignorance, I therefore will now proceed to adapt and mercifully shorten my usual talk about the crisis in American education, and hope that it will seem appropriate to your concern -- and hope that I will get away with this tactic. Agree that I do know something about the contemporary crisis in American education. Because I have been personally involved, if one can consider fifteen years a span consistent with the term *contemporary*.

For the past fifteen years I have been directly involved with an aspect of the crisis in American public education, in the South and, for the past twelve years in Northern urban areas. What I believe I know about the nature of this crisis I think can be summarized in one sentence or, more accurately, one anguished explanation -- namely, contemporary American education, urban public education, is a national disaster. A calamity. A catastrophic, inefficient situation. A social and political powder keg, awaiting just a capricious spark to set off a tremendous social explosion.

The chief victims of this calamity are clearly low-status minority-group children and other children from low-income families. The public educational system has broken down in terms of fulfilling the responsibility of preparing these children for a meaningful role in our society. And what is more, the officials and custodians of public education systems readily admit the breakdown in the process, and argue that they are unable to do anything about the challenge of educating these children to be constructively a part of the American economic, social, and political system. Specifically, these children, literally abandoned by our public schools, in terms of any meaningful definition of the term education, are suffering from a pattern of unsolved educational problems, problems which arise out of the age-old American promise and challenge of providing mass education, or education without regard to economic status. These children are suffering from the increasing organization of our society and the seeming inability of our public schools to adapt themselves to a level of efficient functioning in the face of accelerated urbanization. These children, ironically enough,are suffering from the very past successes of the public schools, wherein public schools were the chief vehicles for the upward mobility of masses of European immigrants who came to America attracted by the American promise of social and economic mobility without regard to the origin of the individuals. The past successes of the public schools in fulfilling that promise clearly led to the fact that our public schools are now largely controlled by the children of those individuals, who now ironically argue that the public schools can no longer fulfill this function of facilitating the mobility of the presently low-status individual. A fascinating commentary on the limitations of human memory.

The result of this complex of problems for masses of lower-status children confined to ghettos, low-income areas, and inefficient schools which serve these areas, is that these children are afflicted with massive academic retardation. Specifically in the basic two subjects of reading and arithmetic; and the data are clear in establishing this fact, that by the eighth grade the average retardation is three to four years in reading and arithmetic. And this is conservative, because it is the pattern of public school research and statistical bureaus to exclude the scores of children who scored too low on these standard exams; and we have not ever been able to find out how many such children are excluded. But the data that are available support without question the calamitous, catastrophic, criminally inefficient level of public education in deprived areas. These data support the fact that the retardation is cumulative; that the longer the children remain in school, the further behind they fall in the basic subjects when compared with more privileged children. Drop-outs are excessive, and analysis of the drop-outs leaves at least this observer to believe that these children are probably the more intelligent, in that they escape from a dehumanized and intolerable situation. Social unrest in the ghettos seems to me at least directly associated with the breakdown of the educational process in the ghetto areas. In short, public schools are now supporting hundreds of thousands of functional illiterates who are unable to find a meaningful or effective role in the society as a whole.

It is no longer necessary for personnel heads of business and industry to exercise any personal prejudice in rejecting youngsters from minority groups who seek employment in any area which requires even secondary education, because our public schools effectively do the job of discriminating at the source for them. I repeat, no one questions the fact of widespread inefficiency in public education as measured in terms of the academic performance of minority-group youngsters. What is questioned, however, is the explanation of this fact; and it is only fair to point out that those identified with the educational establishment provide a variety of explanations, some rather sophisticated theoretical explanations in terms of cultural deprivation, the culture of poverty being inimical to any efficient education in public schools, and so forth. My own explanation is that the educational inefficiency for low-status children is to be explained in terms of educational inefficiency of the educational institutions, primarily. It is a fact, however, that those identified with the educational establishment have wrapped around themselves a mantle of immunity to criticism, and particularly in the area of the inefficiency of their functioning in regard to low-status youngsters -- an immunity to criticism which would not be tolerated if the same degree of inefficiency resulted in the victimization of more privileged children.

It has now become clear to me that this educational calamity, which is taken so casually and matter-of-factly by so many in our society, can no longer be tolerated, and must be compensated for by other institutions in our society, given the ability of the educational institutions to defend successfully inefficiency in regard to low-status groups. That there must be other aspects of our society which are compelled to intervene. Because this is now becoming a problem threatening the very heart and stability of the society as a whole.

We therefore must look for more and more signs of direct political intervention in the educational process, where political officials who are more directly responsive to the population as a whole will move in and take over responsibility for a level of educational efficiency in deprived areas. New York City and New York State may be going through the early stages of this process of political intervention in the face of persistant inability of the educational establishment to raise the efficiency of their functioning for minority-group and low-status children. Another attempt at compensating for educational catastrophe accepted and alibied by the educational institution might be a more tough-minded role on the part of the Federal Government in looking at the logic of continued support, Federal support, for local education without accountability, and without standards. Recently I suggested to a group in Washington concerned with public education the possibility that the Federal Government might have to experiment with techniques of using Federal aid directly for support of education, rather than for continued support of local schools. And, needless to say, this created some sort of consternation in the group; because this was a group that had identified itself as in support of public schools, and had defined public schools only in terms of the traditional definition -- when I was suggesting a new definition of public schools, in which there could be national standards and national forms of efficiency enforced.

A third kind of intervention would be compensatory programs of various sorts -- colleges and universities seeking to make up for the deficiencies of twelve years of education by putting these students into special compensatory remedial programs. And, interestingly enough, most of these have had a success that was unexpected, attesting to high motivation on the part of these children, when the public schools generally tried to explain their lack of learning by absence of motivation. A fourth area of intervention seems to be that of business and industry. Given manpower shortages in certain areas, business-industry has found it necessary to have compensatory educational programs in two forms: basic remediation before on-the-job training. I think this is quite hopeful, in view of the fact that I do not believe that the business and industrial community will long accept this form of double taxation -- that is, continuing to support the public schools while being required to duplicate the function that is supposed to be performed in the first instance by the public schools.

And that brings me finally to the relevance of this kind of Jeremiac discussion for a group such as this -- the intervention on the part of the mass media. Every other form of intervention in compensating for the inefficiency of the public schools seems to me to have had some precedent, but I do not think that there is any specific precedent that the mass media are even aware -- much less involved in -- the programs to compensate for the massive illiteracy being spawned by our public schools in the American city area. But this is what I would like to throw open for your consideration -- and dismissal, if it seems hopelessly impractical. Namely, that there is a role for the mass media in dealing with this present catastrophe. And it is at this point that I revert to my initial role as expert, as defined in terms of practical ignorance and a tremendous amount of theoretical and speculative verbal sophistication. What can a relevant, concerned, serious educational television approach do in regard to helping to remedy this problem of massive breakdown of public education, specifically in our public schools?

I would like to make the following suggestions -- again from my role of expert as defined in terms of practical ignorance. First, develop a parallel educational program on television. And, I'm suggesting, outside of the control of the present educational bureaucracy. A parallel educational program in basic skills of reading, arithmetic, communication -- oral and written -- because the public schools have totally given up in the area of oral communication for underprivileged children. In fact, they have come up with such nonsense as a "second language" for these youngsters. Which to me is the most preposterous and condescending approach -- you wonder how intelligent people could dare to state this. But here, then, is a vacuum in which I think a concerned (and I am presuming concern on your part) educational television could play an effective role by actually teaching the skills on which the public schools have defaulted and now alibi that they cannot teach -- reading, arithmetic, communication. And teaching them in rated terms. And I think that you can hope for success here, because we have tremendous evidence of an intensive amount of motivation on the part of these youngsters who are not being taught in the public schools.

I think that you have the opportunity to do this by free experimentation with exciting, innovative methods presenting these basic skills, Such as experimenting with drama as a technique in teaching reading, arithmetic, and communication. You, I believe, will be doomed to failure if you imitate or ape the methods of the schools in this regard. You will merely bring onto yourselves the dullness, the revulsion, the rejection which are now associated with the public schools as far as these children and their parents are concerned. Your chances of success, I believe, will be increased only if you dare to work in terms of the potentials of your own medium -- the excitement of your medium, the fervor of your medium. You will increase the chances of success, I believe, if you resist all attempts at condescension -- although it might be essential that you tap the genuine richness of the folk experience and folk idiom of rejected and deprived groups of our society. The trick here, I think, would be how to balance the positive and constructive use of the richness of their lives -- or the potential richness -- without at the same time being condescending in doing so. I think that at the secondary and higher education level, you can, by daring to do so, reinforce the fundamental skills that go beyond this with exercises, excitingly and dramatically presented, in reading comprehension; critical thinking; the empathic use of human intelligence; respect for rational, logical, moral, and ethical thought. Even our colleges and universities have defaulted in this latter realm, and when they attempt functioning in these areas of the use of human intelligence in a moral and ethical context, they generally do so in a self-conscious, defensive, apologetic role. They, I believe, generally have failed in providing their students the sense of moral relevance. I think that a truly relevant educational TV would be free of these encumbrances, and could teach sensitivity and concern for one's fellow human beings.

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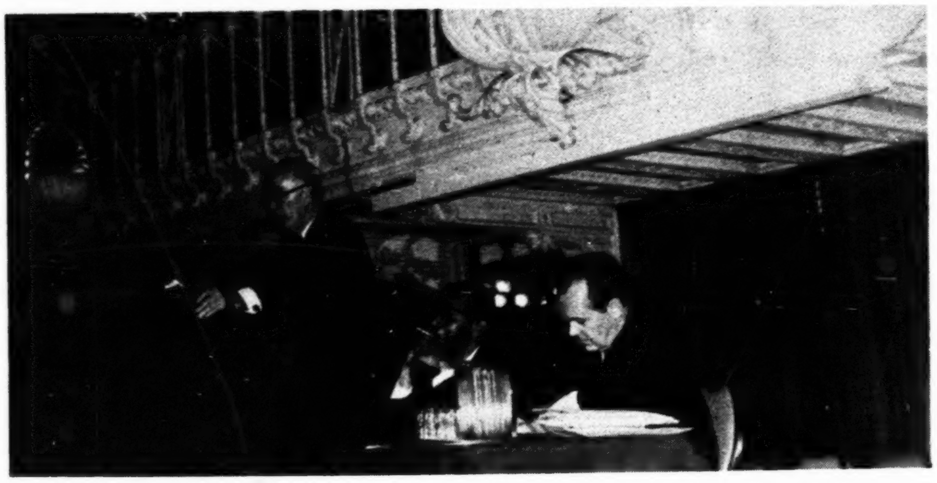
I believe that television -- a relevant, and rational, morally responsive educational television -- has the opportunity to make a major contribution to the education of the general public. A contribution, again, which our educational institutions have failed to make. That is, in teaching social sensitivity, in teaching social responsibility, fulfilling the goals of education in general -- which our traditional educational institutions have run away from, mainly -- the goals of freeing the human mind from shackling, inhibiting, irrational fears and hatreds; from primitive ignorance; from magical superstitutions; and from the inhibitions of petty provincialism. I think educational television can perform a significant function for our society as a whole. A function which educational institutions in the churches have defaulted on -- namely, that of leading this society, for helping this society to see that it is at present shackled by a constricting and debilitating form of pernicious racism. And that is the role of education -- to lead a society toward moral health and strength. Not merely to reflect the decay, the ethical and moral emptiness and erosion that dominate the lives of our so-called privileged individuals.

To fulfill this role -- a role so threatening, so disturbing that our educational institutions have run away from it -- educational television must dare, you see, must assume risks, and certainly cannot flinch from controversy. It must welcome as a test of its relevance the extent to which it does in fact incite and invite controversy. To be relevant in adjusting itself to the basic educational problems in our society, no institution can be safe. The educational institutions are now irrelevant because they are concerned with being safe. To be relevant to the basic educational catastrophe of our times, no institution can be merely a mirror of what is. Or reflect the apochryphal -- or maybe actual -- thirteen-year-old-mind to which commercial television insists upon addressing itself. I repeat, to be relevant we cannot just merely be a mirror of what is, because what is is really intolerable, but must be a window of what could be. If it is to be relevant in the vanguard of a genuine, serious, and honest struggle to make democracy more than words, educational television must be a part of, as well as stimulate and reflect, the urgency of our times. It must seek, I believe, to temper feelings with reason. It must blend the heart and the mind, and must provide for our society that moral leadership and stability without which this society cannot possibly survive, in spite of its vaunted affluence, material and military power. Without some institution in our society assuming this risk, we may well be known to future man -- if there is a future -- as the shortest-lived, most powerful and affluent society that civilization has known.



Presiding, William G. Harley:

I first met our next speaker when he was a member of the faculty of the University of Chicago and Director of the University of Chicago Roundtable, which still remains one of the all-time achievements of commercial network public service broadcasting. Although he is no longer so directly involved in operational activities in educational broadcasting, and therefore perhaps not so well known to the new generation of practioners, I should like to point out that George Probst is one of the real pioneers in the development of educational broadcasting -- I think I might even go as far as to say, an educational media statesman -- and one of the real "movers and doers" in the launching of the educational television movement. It was George who had the gumption, among all of us, to go to the Fund for Adult Education when it was first created, and come back with a grant of $300,000 (which practically scared the NAEB Board to death) for a series of outstanding radio programs, that resulted in such series as The Ways of Mankind, The Jeffersonian Heritage, and others that you have heard of. It was on the basis of this success with the production of the radio series that Scotty Fletcher had the nerve to brace his Board with requests for funds for the start of educational television and the building of the first twenty ETV stations.

It was George, who, on his own got on the telephone and began beating the bushes for money, and raised enough to get the Joint Council on Educational Television organized and launched; it was this group that marshalled the forces of education to testify at hearings which resulted in the reservation of the television frequencies -- without which ... And it was George, along with some of the rest of us, who drew up the plans for what is now NET -- and he later served on its Board. Subsequently lest you think we let George do everything -- he went on into some other, although in many cases related fields, like founding and serving as President of the Broadcast Foundation of America. He is now an Adjunct Associate Professor of History at New York University, the Director of the National Commission for Cooperative Education, and Executive Director of the Thomas Alva Edison Foundation. But although there are important achievements, what I want to stress is the demonstrated fact that here was a real bold spirit and a man of action as well as vision in those very early critical days at the start of educational television; and we owe him -- all of us -- a tremendous debt, for much of the flowering we have now in educational television, instructional television, and public television is due to the efforts of George and to others like him in the very beginnings of this whole movement; and I'm happy to use this occasion to make that public acknowledgement.

GEORGE E. PROBST

I would like to begin by trying to emphasize that I'm very anxious to try, for the next thirty minutes or so, to cause you all to try to take a fresh look at this whole problem we've got. And set aside the easy out, which we all are able to resort to, that the American broadcasting system is, we all know, the finest in the world. We live here, we have the most affluent society in the world -- obviously our system is the finest. I can assure you that it isn't. I have been in a number of countries where they do very much better than we do. And I would like to begin my remarks by associating myself with what Dr. Clark has said, and bring to your attention a quotation which is in the newest book of Marshall McLuhan, which isn't out yet. I saw it in galleys a few weeks ago -- and I quote to

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you a passage which you will find extremely appropriate to what Dr. Clark has said. And this is the only remark that I have ever encountered in any of his writings where he offers a recommendation about anything -- he's always constantly just observing and reporting -- so you, I'm sure, will notice this, too. McLuhan says, "I think we would all do ourselves a considerable favor if we would shut down the television stations for five years, because they're only destroying education, the family, society, and the Government." Now, let's not laugh that off, let's begin from that departure point and think about this whole problem, de nova for thirty minutes. Unfortunately, to do this will involve me -- because it's such a large topic -- in apparently moving in an unrelated fashion from one item to another. And I count on you to make the connections, rather than for me to use the time on the simple ABC's.

We begin with the following proposition, that the Federal Communications Commission operates under a phrase called public interest, convenience, and necessity. And we should all remember that this phrase originated as the authorization to enable an agency to lay down canal boat rates in the 1830's. No further thought went into how to develop our system of communication than to take in as our authorizing phrase an item from the canal boat legislation in the 1830's!

Item two. Educators assembled in the middle Thirties, and put up a struggle for radio, and were defeated. All that happened as a result of the FCC being employed by educators to do something about broadcasting was the appointment of a committee with a man named Charles Beard as chairman. And then they made a study for a year and reported that it was all a disaster. But in the meantime the networks appointed Lyman Bryson to run Public Affairs at CBS, brought Angel from Yale down to NBC; and this was sufficient to satisfy the FCC. Charles Beard reported that it was all a disaster, the committee disbanded, and nothing else happened -- we went on with the canal boat legislation policy. The next discussion we had about this thing led -- finally -- to the granting of some worthless FM channel reservations to some educators; and then we spent ten to fifteen years defending this to people who had the authority to appropriate money for broadcasters to be in the educational FM business but kept arguing, "Where are the FM radio sets?"

The next time we got any reconsideration from anybody willing to say, "Well, what about this?" was 1950-51, when Frieda Hennock and Bill Harley and I and two or three others managed to get a certain amount of deliberation going on how to reserve television channels for education. I had the -- to me -- very impressive experience of phoning every President of the Big Ten Universities to ask them to associate themselves with this cause, and they all said no. They all said no. I had the further experience of having raised $85,000, and brought down 210 witnesses for FCC hearings -- and none of them testified or ever said this instrument should be used in the classroom. (Notice that; I'll refer to that later.) Having raised this money and brought this about (and you would think that with Senator Bricker coming in and testifying and George Meany -- we got everybody), you would think we would have been able to get a vote of four to three. But, I will tell you something, said for the first time in public. We were defeated, and the only reason we won is that Frieda Hennock went and saw President Truman, and said, "I'm licked." And Truman asked the members of the FCC to come to the White House, and told them as follows: "Gentlemen, as you know, you're officers of an independent regulatory commission, and the Executive Office cannot in any way interfere with your work. But I wish to inform you that if you vote not to reserve television channels for education, that evening I will be on a national television network, and I will personally and individually denounce each of you." Now, what's the moral of this story? We didn't get any change in this communications structure as a result of the efforts of the educators, the educational institutions, or this small group of fools of which I was a member, raising money. It finally took place because there are a couple people in Washington paid to think in terms of the public welfare.

Who else is going to think about it? Look what happened to Mr. Fred Friendly. Marvelous plan -- ten million dollars ... Columbia University ... three hours of ETV on Sunday afternoon. And then the question -- how do University trustees know that we wouldn't encounter the risk of public dispute, controversy? So Friendly transferred over to the Center. I ran the University of Chicago Roundtable for eight years -- and what happened when Mr. Hutchins left the University? His successor told me "I do not believe the University of Chicago Roundtable is good public relations for the University because it's true you please many people, but frequently you make them mad, remember. And, secondly, I do not believe in adult education because I never saw an adult who was educated by it." This distinguished educator is the only one I know who left a major university to be vice president of an oil company; he's vice president of Standard Oil of Indiana. But while at the University of Chicago, he destroyed the University of Chicago Roundtable. I fought and kept it going four years, and when I left -- three months later, it was gone. We had a marvelous thing. For three to five million listeners a week -- a program saying something relevant and new and important, intelligible and true. Who else has got that kind of opportunity? There is no equivalent program for the academic community today. Dr. Clark wanted to know what happened to it. NBC didn't destroy it. General Sarnoff thought it was a fine program. I went through thirteen executive vice presidents in charge of network programming, and each took office on the assumption that his first action would be to kill the Roundtable. Each time I went through the argument. I won it with seven or eight. With the rest, I went to see Sarnoff. Sarnoff says, "Look, keep it on," and that is the end of it. NBC kept it on. But the University destroyed it

Once when I recounted some of my experiences, the President of the American Council on Education said, "Mr. Probst, you've had a rich administrative experience." Dr. Clark, I speak from that background -- we can't depend on the educators. I'm sorry to say. I wish we could, and among them are some wonderful people like you. But in terms of dealing with them as Boards and institutions to pull this off -- it isn't going to happen. I will give you an anecdote to show you why. I put up a big effort to reserve Channel 11 in Chicago. We had twenty-two educational institutions. We all met in big meetings -- three times as many people as this. We had much discussion about what to do. I got up and presented my notions. A very simple set of notions, which go as follows: the purpose of one of these channels is to meet the disastrous problem identified by James Bryce and Lincoln Steffans, in their assertion that the great defect of American society is the local community and local government. In other words, in a phrase -- with the decline of the New England town meeting, what we've got is the kind of society where nobody knows anybody else. The newspaper can give us some kind of adequate picture out of Washington. But as far as who is the leading legislator in Albany, I challenge you to name one. Who knows these people, since they get no recognition? They make no outstanding effort, you see. So I told them how in Chicago I thought we ought to use this station for everybody to be acquainted with the meetings of the Board of Education, the City Council, the Legislature in Springfield, local police headquarters, sewage, the parks -- this and that. When I got through, a member of the audience asked the chairman of the meeting, Edward L. Ryerson, head of the Cleveland Steel Company, Chairman of the Board of the University of Chicago, "Mr Ryerson, what do you think of Mr. Probst's ideas?" Mr. Ryerson spoke into the microphone and said, "Politics is out," and sat down. If you noticed the testimony about Channel 11 last week before the Senate Sub-Committee on Communications, its achievement in Chicago is, it replaces a junior college building. That is, you've got yourself an institution that serves a number of people who register and take the exams, and can stay at home and take the courses. And it replaces the cost of junior college. Politics is out. Mr. Fred Friendly is cutting the atom against the grain, if he is planning to use educational Boards to enable him to be in public television.

I'd like to cite one example of what I had in mind at that Chicago meeting. It's the only example I know. I used to think of La Follette and his theory about the States as incubators, agencies of individual experimentation, special opportunities for improving self-government. I used to think that was a major thing. And I used to think that if we reserved television channels all over the country, somebody would use one of these things in one of the ways I had in mind. The only one that did it this way, that I know of, is a station in Oklahoma City, a commercial television station, back in the days before all of the time was sold. This was 1952. There was a guy there running the program, and he devoted the station two hours in the afternoon to report the Oklahoma Legislature. He had remarkable results. Men who were members of the Legislature began to prepare their speeches. The newspapers began to report more about what the issues were. Because the program would go off the air, and people would want to know, "Well, how did the vote turn out?" The whole quality of the deliberations improved in the legislature. A tremendous civic interest in the Oklahoma Legislature developed. With whole knowledge, people began to have a whole sense of participation in the society. This went for about eight months -- and then the station sold the time. When I was in Oklahoma City a year ago having lunch with the vice president of the Oklahoma Gas and Electric Company, out of this old romantic attachment I had to this early idea, I said, "Were you around? Do you remember?" "Oh," he said, "that was wonderful." He named the man, who was gone, "One of the great losses to the community -- he went to Baltimore ... That was the greatest thing we ever had here." Why doesn't anybody else do anything like that? What is the matter with this system, the way it got organized? So the public education system has broken down, as Dr. Clark has reported, and a lot of this has a lot to do with education. Now, as a relief I would like to tell jokes.

My first joke is from Marshall McLuhan, who says every joke is based on a grievance. He tells about the mouse in the Montreal living room. Chased around the room by the house cat and finding refuge in the wall, he waits and hears the noise *bow-wow* -- *bark-bark*. Thinking that the dog has come and chased the cat away, the mouse comes out. As the cat is gobbling the mouse, the cat says, "It does help to be bilingual." You don't like a second language, either.

Our next anecdote -- I was at the University of New Mexico, three months ago, at a State-wide conference -- a very interesting institution, in many ways similar to other State institutions. Everybody that graduates from high school in New Mexico has a right to be admitted to the University of New Mexico. Inadequate staff, facilities, funds, space to keep them all in -- so they have an institutional policy of flunking seventy percent of the freshman class. Now this, on any fair inspection, is not an educational institution. It is an institution for embedding failures. That's all it is.

Next story -- Mr. Charles Kettering, Trustee of Ohio State University -- where they have a similar policy, only it's fifty percent -- always told me, "If General Motors threw away half of their raw materials every year, they'd be bankrupt." Mr. Kettering said to me when I worked for him for seven or eight years -- smartest man I ever knew -- he said that the things that would destroy the United States are specialization and IQ tests. Dr. Clark would be the first to understand what Mr. Kettering means by that. The whole process of defining people as stupid *makes* them stupid. The whole process of occupying a specialized role as a Trustee of an educational institution, and therefore not being able to take the risk of public controversy in order to engage in interests and issues of the larger society, will destroy us. So, the other thing Kettering was always saying was, the trouble with the educational institutions, they are always giving exams, and everybody is always passing or always failing.

And then they get out in life and discover how hard it is to do anything new. And as Mr. Kettering told me, "I go to the laboratory, and almost every day of my life I'm a failure. You got to get used to failing all the time." But the educational system isn't organized -- to create the ability to go back after failure in the people educated, to give the strong strength to meet the real difficulties of this society and this life.

The first week of January, 1951, we launched a study we didn't have the money to pay for -- only a hope we could raise the money eventually. We took the most expensive suite in the Waldorf and staffed it with people from Columbia University, and for seven days we undertook to measure all of the programs of all of the seven television stations in the New York Metropolitan area, dawn through prime-time dark, every minute of every broadcasting hour. The results of this 1951 study are only an interesting aspect of the point I wish to make, although they are a *very* interesting aspect, as would be results of a similar study made in 1967, or 1977. In 1951, of all the programs broadcast on seven metroplitan television stations in seven days, only one -- the *Johns Hopkins University Science Review* -- had anything to do with education. Not one minute of one program at any other hour on any other station was in any way related to education.

But this is not my point. What I want to draw to your attention is the purpose of that 1951 study -- the design, the approach. What we were looking for was the total service, the total impact of television. And I think this same search pattern may help us today in identifying -- and planning possible solutions for -- the problems of educational television. Very few people talk about, or think about, the total service, the total impact of television -- commercial, educational, instructional, or public either individually or collectively. They always talk about the program, or one program series, as if they were talking about a particularly attractive (or unattractive) tree -- not noticing that maybe somebody is lost in the forest.

WILLIAM G. HARLEY

Presiding, William G. Harley:

The Reverend John M. Culkin comes as close to being the omnipresent media man as anybody I know. It matters not whether one's at a seminar in Honolulu, a committee meeting in Washington, or an international conference in Paris -- there is the tall, smiling, handsome priest from Fordham. And it's not so much that he's omnipresent, but I have a suspicion he's almost omniscient -- or at least he's highly knowledgeable in the whole range of media, and active in a wide range of ongoing activities in educational communications around the world, where his keen insights are eagerly sought and generously contributed. He has taught widely, published profusely, and is a member of dozens of committees and advisory boards for media groups. After receiving his Doctorate in Education from Harvard, he returned to Fordham, where he serves (that is, when he's on the premises) as the Director of the Center for Communications. In Paris, where we were a short time ago, I watched him charm Loretta Young as well as a half a hundred Latin Americans; and this charm has also succeeded in luring Marshall McLuhan to come out of Canada to join the Fordham faculty next year, as a part of Father John's Communications Center, where presumably Marshall will present his media message and/or message media. I assume this is some kind of a tribute, not only to Father John's charm, but also to the quality of his mind, and certainly the breadth of his understanding.

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THE REVEREND JOHN M. CULKIN, S.J.

One of the hardest jobs in life is responding to introductions. A friend of mine has one -- when he is introduced, he says, "Some of my best friends are priests, but I wouldn't want my daughter to marry one." The other hard job I have is explaining to the people at Fordham where I've been. All I can tell them is that I love Fordham dearly -- that's why I return so frequently. They did a student evaluation of courses this week; and next to my name and my course they said, "Father Culkin is a myth."

David Susskind and I did a little tour of New England two years ago, where we got on radio shows and talked about what media are doing to people and things like that -- we called it the David and Goliath Show. And wherever we went, David got these great effusive introductions, and he had a great story about his return to the high school outside of Boston where he went to school. He meets Mrs. Schultz, who is still there. It's like finding that Magellan is sailing the seas, to find some of these teachers still in the schools. And he goes up and says he went to the school, and she says, "Yes I remember you -- you were back around such-and-such-a year. Your name must be near the end of the alphabet, because you sat near the window." You know, the old alphabetical order thing. "Now I just can't remember the name; what's the name again?" He said, "David Susskind." "That's right, I remember. What are you doing now?" He said, "I'm in television." She said, "That's very nice -- wholesale or retail?"

Probably the all-time introduction -- and if anybody has one better I wish they would give it to me -- is one you may be familiar with, the famous Minnie Guggenheim introduction at Lewisohn Stadium. Since she sponsored the open-air concerts, she would always get up and say hello to the crowd, and react very warmly with them. And then introduce the guest soloist for the evening. When Isaac Stern was up there once one windy August evening, she had a set of very well-tailored notes in front of her; but they blew away and were not recovered. She got very, very flustered. She said, "I don't know what to tell you about Mr. Stern. He is a very, very important man -- the most impressive thing I can tell you about him is that his Who's Who is seven and a half inches long!" It's not recorded whether the concert when on as scheduled.

THE REVEREND JOHN M. CULKIN

Maybe I could hold my breath and not talk about anything that blows down from Canada for an evening. I'm going to talk about kids for a while, because they never get into this sort of discussion. And some of it may be familiar -- I hope not. Just to drop my final name of the evening, after the Paris conference I went down to Rome to see Fellini -- since all the good guys are coming to the Bronx this year, why not Fellini? You know, everything is possible, so I had written ahead to him, saying why not come over for a few weeks? I get on the plane from Paris to Rome, and pick up Newsweek and there it is, Frederico is thinking of coming to meet some students. So I had lunch with him on Good Friday, of all days, and he said the one thing that would bring him to the States (and he's interested in coming -- he's going through a case of the eight-and-a-halfs right now: "Can I or can't I? Will I or won't I?" and all this sort of business) -- the thing he's most interested about is coming to the States to meet kids of all ages and types. Because he sees something happening over here which he thinks is sort of the point of the arrows. Something new that has never happened before. This liberated, independent, freely-communicated-to youth group that makes so many of its own discussions independent of the traditional curbs and checks and balances. And he said "Isn't one of the big things for us today to learn how to learn from these kids, while at the same time doing something for them?" Now, there is a better and snappier way to do it before we put it on a brass plate and put it some place. But I really think he is on to something, which all of us have probably been on to, in some way or other.

We're talking about instructional television. Let's talk about kids in classrooms. What's the name of the book that describes kids in classrooms -- The Tedium is the Message. Bored. Man, they have had it. We'll all now make five exceptions to the rule and say things are not as bad as the Big Fellow thinks they are. But by and large, this is it. I just came back from a week in San Francisco, talking to the hippies on things like this. Very interesting phenomenon. So attractive that right now in San Francisco they're worrying about what they can do this summer when 200,000 kids from all over the country just tell their families so long, because they're going to go and follow where they know people are going. This is not a local phenomenon at all -- this is a drift; and they pile up on the West Coast, 'cause you can't walk no further. And some very interesting things are happening. None of which we want to set up as absolute, permanent, perennial models of human behavior. But all of the extremes, if you want to describe it that way, and all of the points of arrival people get to, the idiot looks at them and says, "They're not like the way we've been doing it. Therefore they're wrong. Why can't they be normal?" The cab driver who drove me down here is fighting the long-hair kid thing: "And my wife is crying over it, and the kid won't cut his hair." They just don't have the clue to what the ball game is about.

The poor Guy from Canada gets clobbered all the time. He's trying to analyze some things that irritate him very much. He doesn't like television very much. But in our society, to the old, square, perennial, tedious klutzes the mere willingness to investigate a question means that you automatically approve of the thing you're investigating. This probably is the one thing that has made it most difficult -- just to talk about these problems, never mind to solve them.

What are some of the things that I perceive in a very, very quick way in talking to these kids in San Francisco, in just observing them? It's so corny, in terms of their behavior. If some nun who never saw the light of the city street, invented a way of life for people to be charitable to one another, to love one another, she would never come up with something as corny, in our traditional way of talking, as these kids do. These nice people come to you on the street and say, "Wouldn't you like a cookie?" Well, that's pretty old-fashioned stuff. They're not putting you on -- there's no violence involved in this. They're not beatniks. People leave their cars open in the hippie parts of the city. These kids just have completely different reactions. No, I'm not approving of these things. I'm just trying to describe some of them. And then ask myself, and then ask us together why this particular manifestation took place at this particular time, what it's like, and what it tells us about the things they are reacting against -- and perhaps figure out some kind of mediation that might go on between the different sort of worlds that are emerging here. What these kids are reacting against -- they say, and they've got a vocabulary to put on it -- is the old categories. And this is going to sound like familiar stuff -- they're reacting against the people who live their life from the eyebrows up. Dessicated, antiseptic, aseptic, bloodless, "I-it"-relationship people, who never really communicate themselves in the process of being with you or talking with you. We live in a culture which has systematically made psychiatrists richer by frustrating and repressing every emotional sign in its young. "Don't look around, sit still, don't touch, shut up" -- the whole bit. It's a beautiful system.

And the schools didn't help very much. There's a magnificent film by Richard Williams called The Little Island, an animated film about forty minutes long. It's about three creatures who land appropriately on the title of the film. One is The True, one is The Good, and one is The Beautiful. And each of them goes through a little reverie in which he imagines what the world would be like if he had complete control. So there they go. Truth takes over, and efficiency and competence reign -- and sort of leave the people out. Goodness takes over, and there is a great welling up of love between people. Beauty takes over, and this whole big superaesthetic is all there is.

My feeling -- just as a guess, useful or not useful, according to the way you see -- is that we've had our period of the Good, probably at the turn of the century. You know, the good old-fashioned American virtues and everything like that were pretty much in the ascendency; and people were pretty well protected in the upbringing of the young by the fact that if you just triangulated family, Church, and school, you pretty much controlled the total environment of the kids. And you could decide when you felt it appropriate that certain things entered into their lives, when they were ready to know about whatever it is; and aside from the neighborhood lots and neighborhood gangs, there were very few other communications media to disrupt this little bit of a monoply.

Goodness has sort of had its day in many ways, in this overblown, totalitarian, monopolistic sense. Then we entered what you might call, just vaguely -- and I'm not going to defend these categories very strongly -- a period in which people are reacting against the homespun sort of moral virtues and moving pretty strongly toward the virtues of reason, of science, of efficiency, of competence. Good period, nice reaction. A reaction was set up by the opposite -- the Mae West story: "For goodness sake, Mae, where did you get those diamonds?" And she said, "Goodness had nothing to do with it." And for a lot of people this was the point. As they moved away from the world in which you just had to be a nice guy, a dutiful son, or a nice parishoner, or a good student. Moving away from that sort of thing into a realm where competence is the coin of the realm sets up its own dichotomies and splits, and unhappy teachers and families. This sort of pure-reason approach to life has sort of had its day -- maybe some of you have never even gone through it or observed it.

What are we in for now? Now we are in for emotion. We are just going to be swimming around in sentimentality and tears and things like that -- and we set it up. The whole culture has nothing to do with goodness or anybody getting up in the morning and saying, "Oh, let's have an emotional bath." Art, you know -- Art is here; and these are all good things I'm talking about. I'm talking about a balance among the three of them obviously. This is the way I read these kids. The distinction that George Probst made between phoney and real. So many of the things I think about in terms of communicating with the children Dr. Clark is talking about, are in terms of some kinds of understanding of where they are already. Bel Kaufman's quote, to me, sums it all up (a lady who's bright, presumably -- I don't want to know anything about her biography; I just want to take what I can from the book because that's where everybody else finds her); and she says, "I just can't get through to these kids. No matter how much I prepare, I can't get through to them, because they've got no background." Well, Hell, Bel -- the one thing these kids have got is background. It's not your background -- that's what you're telling us. And since you are in the business to preach yourself, instead of reach the kids, you are now in the business of blaming your failure to communicate on them, rather than you.

A very unfair example comes to mind. Two people want to get a message across. We'll simplify the message and say it's sort of a who - what - whom situation. So you've got two whos, two whats, and two audiences out there. As the whos get prepared, one spends ninety percent of his time preparing the what and ten percent analyzing the whom. The other spends ninety percent on the whom and ten percent on the what. If the guy who prepared on the what fails to communicate, they fire the audience. If the guy who prepared on the whoms rather than the what, fails -- he gets fired. Which would you want to carry your messages out if something really important was at stake? This guy spends more time analyzing the audience; and if he fails, he's going to get clobbered. The guy over there, if he fails, the audience gets clobbered. They don't discover. Who's over there? Bel Kaufman. Who's over here? The guy writing commercials for cancerous cigarettes. Nice overstatement, good big fat caricature that lets everybody out that wants to get out, by saying I overstatad the case.

Well, there it is -- sensitivity to the fact that saying things in the presence of other people doesn't have a damn thing to do with communication. If they didn't hear it, you didn't say it. And yet how much of the parental talk about long hair, how much of the stuff that happens in pulpits,how much of the stuff that happens in classrooms is based on the fact that merely articulating certain words in the presence of other people is the definition of communication. Now this sensitivity to audience, of course, has its problem. We've got teachers now who, because the present school system is so bankrupt, have to go along with the fact that the five most taught novels in the American school system are still Silas Marner, Tale of Two Cities, The Scarlet Letter, Great Expectations, and The Red Badge of Courage. That's called turning on the youth.

Now the problem comes -- I'm very good at this talking about all these sins, because I've committed all of them. But the problems now is if we have this new whom-oriented approach, and we have all of these new media and new tools at our disposal to communicate with the kids -- what do we want to do? Well, you know what we normally do. We just do more of the same with new stuff. We pour the new wine into the old skins, and wonder why the whole thing falls apart. You can't talk about just stuffing television into a classroom, and think it's going to change it. What you want to do is change the classroom. And this is a long speech, and you can read about it in magazines which I'll be selling outside the door at the end of the evening. But it's this inability of people to perceive the new structures that are operating that is the point. That is why, if I were going to invent some kind of statement to tease people into thinking about it, I might not reject "the medium is the message" right away, because what it is doing is obviously overstating. These poor simps at Columbia and Fordham who are commenting on the Man's appointment say, "Well, it's very obvious that the message is also a message." What a bunch of klutzes -- there's not even a place to grab hold of these people to start talking to them!

What we have to do is pay attention to environment. Obviously, content is important; content means something, too. I know; I read the letters in reply to my article on media in the Saturday Review. But if we have to pay attention to something, it's got to be the fact that there's something in the wind -- and you've got to grab that. Just to go down the old alleyways doesn't make a darn bit of difference if they lead nowhere. What we have to do is investigate media in the widest possible sense. Total environment, including the city, impact of all the media, the school building itself -- people put up brand-new schools, and say, "All right, now let's talk about the educational program." Too late, buddy. The very stones of that school cry out against certain types of learning, and you didn't have a clue; you just put up a nice, clean, stainless-steel, antiseptic, obsolete building.

Now, we've got this new kind of kid, -- and as I perceive it, only fools and people who write feature articles ever talk about "youth" in general. But all things considered, there is one fact that we have to get used to: we are the strangers in 1967. It's their turn. They know it. They know no other. They have not had to translate any past experience into a new experience in order to understand a complete electronic environment with radio, television, telephone, and the whole schmeer, and all kinds of information available immediately everywhere. This is the only world they have ever known. They're not surprised that you can get around the world in sixty-two minutes. It's the only way. They've seen that since the time they were born. And this has never happened before.

And still we have these idiots who arise at conferences, wishing to soothe the feelings of everybody involved, and read this quotation saying that the youth are getting worse, and they're not paying attention to elders, and who knows where we're going from here. And then he puts the quiet smile on (and you've seen him do it fifty times); and he says, "Do you know who said that? Socrates said that, and do you know when he said that?" -- he usually says 3200 years ago; he never knows when Socrates lived. All he knows is, there was this shipmaker named Socrates who had a quote which would allow us to satisfy ourselves that there is nothing here but the perennial gap between generations -- and therefore just sit on your tail, buddy, because it will all go away. "Look how nice you are -- and people were saying this same thing about you." And this has got nothing to do with 1967. Because this is brand-new. It's never happened before. Our inability to deal with it should not make us feel guilty or anything like that, because there is no reason to think that somebody could have written a book to help us on it. The obligation upon hearing it and sensing it is to do something about it. To look at it, but not just to get caught up in giving old-fashioned speeches to meet new fashioned situations.

These media have produced a new kid -- and the differences are there. I mean, the Wilbur Schramm "no difference" is so unbelievable -- all you've got to do is open the window! It's like the weather forecaster that's down three floors below the surface, talking about the weather, and giving a report that's got nothing to do with the weather outside the window! Look out the window -- don't look in Schramm's book to find out where the kids are different. Can you imagine going around and talking to parents of the 25,000 hippies who have jumped the lead back in Oshkosh, and asking them if there are any significant differences between the kids today and the kids twenty years ago? Wow! It's just unbelievable. So we've got these new kinds of kids, and we've got these enormous gaps between generations. Whether the world is ready for it or not, by the way, there is a new being about to be launched upon the earth; and somebody came up with the right title, and the new being's name is Son of McLuhan. Twenty-five years old, he revolted against the whole thing for four years, and did the most horrible thing known to the mind of man -- he joined the American Army. And then he became a convert to McLuhan ism and returned to Daddy Hall, and new he's got the speech up. Look out! We are bringing him across State lines for immoral purposes, come September.

He came up with the phrase, or quoted the phrase to me,"This is not the lost generation, but the last generation." That the idea of biology being the determining factor in measuring distances between people is probably gone forever. You get this with the kids sometimes. I met a kid out in Watts last week -- nineteen years old, one of a bunch working on a film together. These guys have really come up the hard way, and now they were getting a chance to do something. He said -- at the age of nineteen -- "I wish I were young again." The gap he feels between himself and a thirteen-year-old is a generation gap. Look at some of the kids in college whose brothers and sisters are three years younger -- "They don't understand." So the biological thing is kind of old-fashioned -- it helps for birth certificates and all that sort of business.

I think -- and this is not a commercial for this sort of thing -- but the new media which have produced this new kid are not just (if you will pardon the phrase) audio-visual aids to instruction. They are also things which should be studied in themselves. So as not to train kids to become media to study mediacy -- that quality of interpreting all media in the way in that we have used literacy to interpret letters. To fail to prepare kids to be intelligent consumers of television films and the whole schmeer today is to fail to prepare them to live intelligently in real life in the real world. Wouldn't it be nice if the real world went away? Sure, lady, What are you going to do about it? It is the fact, and you aren't. So that's the simple one. I would think if a lot of the instructional television stations did nothing else to overstate the case again -- but used their air time to have some kids, on the air and in the classroom, discussing what they have looked at on television the night before, they'd be doing as valuable a service as a lot of others I can think about. New kids, new subjects to teach them about, new media.

Now the problem with using the new media -- is this the problem that the Man calls the rear-view mirror? The sociology of invention is a very simple one. Whenever a new thing came along, nobody had a clue to what it really was. What was the radio? It was a wireless, obviously -- what a nifty telephone, no wires! What you could do was talk to this guy over there, you used to talk through a wire. You got no wires -- no telephone company and all that. How long did this go on? Ten-fifteen-twenty years, before Marconi and the elections and all this sort of stuff? This isn't the guy with the stone ax who went around fooling around without changing it for twenty thousand years. These are our kind of guys -- some of these men still live. And it went on that way for twenty-five years before they discovered that a radio was not a telephone sans fils. The railroad car is a brilliant one. As soon as the railroad was set up, they said why run those covered wagons across the country like that? Let's put the wagons on the railroad cars. So they put the wagons on railroad cars; and then they said, "Funny thing -- when the wagons are up there on the railroad cars, the wheels don't really make too much difference. Let's take the wheels off the wagons." So they took the wheels off the wagons; and then they said, "As long as we're at it, let's build a railroad car." This is the beautiful thing about the world of id, you know, looking at this BC world, and seeing all these things happening.

So it is predictable not to be surprised that it's nobody's fault that the majority of people don't perceive what new things really are. And the way we tend to take all these new media into our world is back in the old-fashioned ways. Look at fifteen years of instructional television. A lot of it is BTF -- Big Talking Face. It still doesn't have the power to overcome many of these difficulties. At its best, it still has to be integrated with the school system. Which will only tolerate certain types of innovation, as those of you involved with stations know better than you'd like to know. But, as you peel away the last part of the onion, after you've talked about the care and feeding of school superintendents and involving the teacher in the program and enough money for production and all that sort of thing -- what's the thing, right now, at the core of the onion, which really is keeping us from doing the job? Well, I've invented a word to describe this, or this kind of person. The word is POB.

And I'll tell you I'm a P-O-B before I start, so that you will feel better about the whole thing. A POB is a print-orientated-bastard. You say a word like POB, and people say, well, he's against books -- I didn't say that. What are the characteristics? You could be an opposite of a POB, whatever that is, and read plenty of books. But to be a POB is to consider that only book is a valid communications medium. And to be unaware of the fact that the linear, sequential, one-thing-after-another characteristic of the printed page has imposed upon you a linear, one-thing-after-another, sequential way of looking at the world; and you have assumed, because you've only met POBs in your life, that this is natural, human, ordained by God, and something to talk about on Thanksgiving Day. It just happens to be a little cultural accident that you've got, that preliterate peoples don't have, and that postliterate people won't have. If you've been fed a set of goggles -- you got 'em. They're not bad goggles, they're good for things they're good for. But they leave out as much as they include. And this is why television and films have so many difficulties in school, because there has to be something other than what they are. POB, by the way, first appeared in Popular Photography, in their year-end thing. And I went to Mexico in January, and they had this Spanish edition down there and POB down there is BOI -- El Bastardo con Orientatione de Imprenta. Beautiful thing! -- to go to a country and know that you had enriched their culture. And in France, the translation was a textal maniac -- text maniac. Not bad -- close to other kinds of maniacs, isn't it?

This is something really to be thought about, because I don't see any problem in any area of life that the insight involved here doesn't just blow wide open -- and give you an absolutely fresh way of looking at it. Which is so liberating that you don't have to go on LSD, because it will give you the kind of kicks and satisfaction about knowing that there is a way to get a problem that you would never lay a glove on any other way. The things that the kids respect are competence -- there is no defense against competence. They respect the real, and hate the phoney. They respect the relevant; and, man, is this important for the schools -- the hot issues don't get into the schools by definition, because we don't want to handle them there. The kids respect the human. All things considered, these things aren't bad characteristics to put high on your list of things to respect. If we are really interested in getting through to these kids, we have to deal with people who treat them on the level of competence. Not as buckets to be filled, but as co-learners with the teachers. We have to speak to them on the level of reality, and see that it's silly to tell lies in school any more. You used to be able to tell lies, and they wouldn't find out until a long time later. These kids know. They have competence models against which to judge you. They know whether you've got it or don't have it. They can compare you and say, "Would he get a job on television, with the competence that he can bring to this sort of thing?" It may not be a very good norm, in the long run.

And to be human. I just want to talk about one person here, and then get down. The one person is Tony Schwartz. Tony is a sound artist, maybe the most competent sound artist in the country -- the checks seem to indicate this. He's won the World Radio Festival five years running. He does the commercials for Alka Seltzer; he does Coca Cola, Johnson & Johnson, all the big ones. He does the ones he wants to do. Tony works out of this basement on West 56th Street. He spends about half his time working for these kinds of people, and about half his time working for himself. In terms of communication, let me suggest something he did to get a message across. Two small children in a one-minute TV color spot. Two small children dressing up in front of a mirror in parent's clothes -- six and five -- boy and girl -- putting the gloves on, the hats, the pearls, the powder, the whole bit -- talking back and forth to one another -- "Let's not be the first ones to get there, and I hope the Schultzes don't come." They're all dressed after fifty-five seconds, and sitting on the front stoop. The voice-over comes, saying, "Children learn a lot from their parents ... Do you smoke cigarettes? .... The American Cancer Society."

Tony has a little tape called Time-Lapse Nancy. He's been recording his niece for fourteen years, ever since she came home from the hospital. At the end of fourteen years, he's got hundreds of hours of her talk. He condenses it into two and one-half minutes, and you hear the single same human being going from cry to gurgle-gurgle to ma-ma -- to her first date. Schwartz is in touch with people in terms of competence and humanity. He did a program for Si Siegel on WNYC, interviewing a

Negro lady from the South, talking about her experiences down there. She had gone through the cattle-prod thing, and she had gone through being disinfected in the jail. She was talking about this in a very mild sort of voice. Tony said to her, "That was a very terrible experience." He said, "What was the nicest thing that ever happened to you?" In response to his very gentle question, her voice even got more gentle, and she said, "Well, the first time I was ever out of the South, I was in Chicago, and I was waiting for a train, and I was scared in a big city like this. And somebody tapped me on the shoulder, and I turned around, and a very well-dressed white lady stood there, and she said, 'Excuse me, lady, your slip is showing.'" See, if you're competent and relevant and human, you can hear things like that, because people will say them to you.

Tony has taken ten kids who are problem children in school, and become their teacher this year, one day a week. He teaches them how to examine the world that they're in, to understand it and themselves in the process. The first thing that he said was, "What's on in school? What's of interest?" They said hair, this is the year of the hair. So he got them talking about the long-hair thing, and showed them how to work the recorders, and they took the recorders back to school and interviewed the kids, parents, teachers, principal. They had five hours of tape. So Tony said, "We can't get anybody to listen to five hours -- how do we get it down to fifteen minutes?" So the whole editing process comes, because -- man -- it's the message they want to get across. They're involved. They got it down.

Next thing the kids did was their own autobiographies, kids interviewing the doctor that brought them into the world, aunts and uncles, and things like this. Tony says that some of these things are as good as any sound artist in the world is doing today. Oppenheimer said it before -- he said, "There are kids on the street today with modes of perception that can solve problems that I can't touch, because I get tired -- eyes and things like that." One kid Tony had, a psychiatrist had sent to him because he was suicidal. Tony brought the kid in, showed him how to work the tapes. The kid got out and started to do the biography of West 56th Street. River to river -- cellar to roof. Turned in a beautiful job. Then he went back to the psychiatrist, and said, "Doctor, I've got a new problem. I'm afraid of dying." Because he was involved in something. The same kid did a little piece five minutes long, which I heard last week, on the death of his grandfather; and Tony said, "There is nothing more to say -- it's all there." So there are these competent, relevant, honest, human people around who can be put in touch with the kids. But if Tony Schwartz applied for a job at PS 53 or at St. Paplucius Prep, he would be out of business and chewed to pieces in a very short while.

So we've got to make our options. I've just got one phrase that I use to sort of describe what our role should be in a lot of these things. Latin is out, so it's now fashionable to quote things in Latin -- you've got to stay one pendulum hop ahead of the crowd. And this is my phrase. What everybody should say every morning when they roll out -- three simple Latin words: Ne Sim Obex. Being translated, it means, May I Not Be An Obstacle. That's a very positive thought on which to end.

CURRICULUM AND ORGANIZATION PATTERNS

Leslee J. Bishop
Harold B. Gores
Lewis A. Rhodes

Chairman, Richard V. Brown:

This second general session of our "New Relationships in ITV" Conference is going to be devoted to a very basic aspect of any kind of instruction, "Curriculum and Organization Patterns". And to start us off immediately, and right, I want to "take you to my leader" -- at the Association for Supervision and Curriculum Development, Dr. Leslee Bishop, Executive Secretary of ASCD.

DIRECTIONS AND PROCESS IN CURRICULUM CHANGE

Leslee J. Bishop

In any discussion of curriculum, it is necessary to begin by defining one's terms, or to establish parameters and dimensions for one's own definition among the many ways in which the word curriculum is used and misused. Let me state first my concern that the revolution in education and in curriculum is still more a semantic orgy than a reality. Let us admit that the gap between what is and what can, or should, be is more often a source of frustration than a source of pride in achievement.

Curriculum is a little-understood, over-generalized word. Curriculum is the fragile systemic web of experiencing and learning. It is the network of plans and perceptions that should represent the central concern of the educational enterprise; it should receive major attention because the rationale of the school as an institution and as a responsibility should be expressed within its domain.

But more specifically, text and reference books, library and audio-visual materials, science and technical equipment -- these are curriculum materials and artifacts, curriculum. Alongside these items are schedules, grading and non-grading, reporting procedures, data processing requirements, computers, and carrels. These are part of the processing and the climate within which curriculum will develop or die. These items are facilitators or inhibitors to its culmination, but they are not curriculum.

Then there are curriculum guides, course outlines, standardized and teacher-made tests, statements of objectives, boxes of developed discovery or instant inquiry, scope and sequence charts, child growth and development indexes. There are carefully selected organizing centers, concept clusters, course emphases suggesting experience and resources, related modes or strategies of inquiry, and development tasks, When these are woven together into meaningful configurations, they become essential components in a curriculum design or plan, but they are not the curriculum.

LESLEE J. BISHOP

What is it? The real curriculum is what actually transpires; it is the experiencing that occurs for each pupil at the conjunction of perceiving, manipulating, and performing, amid instructional strategies and possibilities. It is the action and interaction that characterizes the classroom situation; it is the confrontation, the individualized grappling with concept and artifact. It is behavior changing in the milieu of resources, plans, and personalities.

The social realities and imperatives, the physical and electronic environment, the organization and arrangements, the inservice or preservice teacher education program all have a different look when we perceive curriculum as a dynamic, behaving learner, rather than as a static plan or a device, however exciting. This is part of the necessary search for perspective, or if you prefer, the system.

If the experiencing of the learner in dynamic interaction with instruction is the first dimension of curriculum, then of course the instruction, the teaching, is the second dimension. As someone has said, "It hasn't been taught if it hasn't been learned." Agree with it or not, this gets us into the tremendous element of teacher influence, studies the teaching act and the impact of teacher style upon what people know, on what students learn. And we get into verbal behavior patterns and nonverbal behavior patterns. And our concept of the teacher, let me add, has a lot to do with the kind of curriculum we are talking about, and the kind of environment and the kind of behavior sought; and whether we are concerned with a skill, which is one kind of learning; with a commitment, which is another kind of involvement; and knowing, which is another dimension.

Now, I should not take time for the third dimension, which would be a concern for the environment, ecology, or context. This is the province of another speaker. But I'll just say that the new environment which is being created is something which we must shape in connection with our curriculum; for as we shape it, it in turn will shape us. And this cannot be divorced from significant curriculum elements, so this gets us then to organization, whether it's a team or Trump or ungraded or continuous progress or the middle school; and we get to physical conditions, whether there are rugs on the floor, or the park or the plaza, and the educational facilities and the technology and all the rest that you will be hearing about.

The fourth dimension that I wanted to include were the impinging elements, which time does not permit developing. These are of such significance in curriculum building that, let me suggest, it's great for laughter to talk about Old Silas Marner, but (as a public school person who once spent two months trying to defend use of J.D. Salinger) it's a pretty tough deal in many communities to be relevant in a significant way, to introduce new and significant materials. We must plan to contend with the new and dual educational forces, and with the knowledge that our curriculum has been determined by the scholar, the psychologist, and the school person working together to define what are these essentially fragmented elements of curriculum. This greater concern for the system, for the total curriculum, and the impact of curriculum may help us anticipate a more humane curriculum; Father Culkin gave us the clues last night. So then we have first the idea of the structure of a discipline or a core idea, highly sophisticated but a significant departure point and a framework. This is the substantive domain, along with behaviors or modes of inquiry, and appropriate methods that are part of the knowing, The second is the behavioral or dynamic areas in which the teacher and the pupil and other students interact in the milieu of the artifact and idea. And, finally, the context or environmental elements that affect these other areas and contribute to their living or dying.

Chairman, Richard V. Brown:

This next gentlemen who will be speaking to us I only know by reputation; and all I know is good. I was most fortunate in meeting him this morning, and I am sure that you will be delighted, as I am, to hear him talk. Dr. Harold Gores, President of Educational Facilities Laboratories.

CHANGING PATTERNS OF SCHOOL ORGANIZATION

Harold B. Gores

When Mr. Mace asked me to be on this program, I indicated to him that there are at least a dozen persons who are less confused than I about instructional TV. But I accepted, nevertheless, because it gave me an opportunity to get one of my problems solved, which I will reveal to you before I sit down. As President of Educational Facilities Laboratories, I deal with the solids of education. Intellectual matters of curriculum, pedagogy, and so forth, are left to other sectors. We deal only with solids, and not with its fluids or its liquids or its gasses -- the curriculum. We deal only with those things you can with impunity kick with your foot, that surround the environment. Yet it is not entirely unimportant, I understand, to quote Dr. Johnson of Life Extension Institute, who asserts that the quality of environment can make a fifteen percent difference in the productivity of office workers. Now, we do not have a companion study in education, but I think we can generalize. That if it makes fifteen percent difference -- which is pretty good interest on your money -- according to the quality of environment in which people work, that how much a teacher teaches, how much a child learns may very well be of the same order. So we deal only with that small fifteen percent.

I can talk about organization in education only as a spectator; but I get around. It has been eight years now since I discarded my academic robes for a Foundation garment, and I can only say what I have seen around. As you know, consolidation of districts is going forward apace. We're down now, to -- I don't know what the last count is -- but something on the order of 23-or 24,000 operating school boards in America, where once there were 50,000 not so long ago, each one prizing its autonomy and reinventing the wheel. Difficult to deal with in many institutions and many of these districts, a good part of the private sector's time is spent in trying to find out who makes a decision around that place One of the largest concerns in this country which deals with school boards told me that they had an inquiry come in from a high school principal not too far from here, but far enough away so it is not New York City. By the time they had responded to his inquiry, and actually sold the machine about which he inquired and wanted to put into his school, and costed out the whole process -- it would have been cheaper for them to send him the machine when he asked about it in his first letter.

Education is a difficult customer. Getting less so, though, because we are getting some substantial consolidation. We still have 10,000 one-room schools, dotting the landscape. There is much talk, but little action so far, on decentralization, the difficulty being that it is so hard to break up something that has become crystalized in law, and indeed ingrained into our culture -- and how do you break up this thing that has already solidified? But it is clear the move is coming toward some form of decentralization in the big end of the scale, and continued consolidation at the small end. Another move that makes a difference to the private section here is that increasingly now, I think, we can see consortiums coming. We see it first of all in the school building field. A few years ago EFL put together thirteen school districts in California, which required $30,000,000 worth of school building in the same three-year period. We put the thirteen school districts together, which formed a corporation; and it was not more difficult than putting together the thirteen original Colonies. These thirteen districts approached their common problem together. They maintained their autonomy and their right of separate decision, but at the same time joined in to get the advantage of a $30,000,000 volume, and by adopting a systems approach issued performance specifications rather than materials specifications. In other words, they asked manufacturers to come up with something that would do these things, rather than to be made of these materials. Additional consortiums will be coming; and I think, thanks to the Federal Government's aid which is coming, and especially the strengthening of State departments, you in the private sector will find larger customers to deal with, and they will be well-heeled.

As far as the organization of schools is concerned, further, in the past we have had pretty much eight grades of elementary school -- half of the children in the nation are kindergarteners, but half are not. Four-year high schools, then came the junior high school erupting around 1910, and the six-three-three pattern became quite prevalent. Erupting now is another arrangement relating particularly to the middle school in the link, a general move in some quarters from six-three-three to four-four-four -- New Haven, Connecticut, being one of the early leaders in such a move. The middle school being grades five, six, seven, eight. A downward extension is coming fast, thanks to Federal aid and our concern about the central cities.

Kindergartens are coming fast now again, nursery schools coming, whether they are called Head Start, Economic Opportunity, or whatever -- the four-year old is going to be coming to school quite fast in our central cities and, after a while, outside the central city. Everything I read indicates that the real great wasteland in education is between birth and starting school. There is your great wasteland. The notion that the chubby child lying so placidly and peacefully in his bassinet and growing fat is the ideal child to have is getting challenge from every quarter. I heard a neurophysiologist say the other day that if you put a newborn chimpanzee's head in a boot for the first six weeks of his life and then remove it, he never again in his life will be able to jump from tree to tree. Something was happening in those first six weeks when he was not jumping from tree to tree that made him unable later in life to perform in this fashion. Blind the eye of a kitten for the first five weeks of its life, and then remove the blinders, and it never again recovers binocular vision. I think you will find the great wasteland has been down in the birth-to-starting-school business, so any of you who can target in on education in the early years will have found a lively sector.

Don't forget the other end of the scale, too. We are building community colleges in this country at the rate of one a week. We know the last time we counted we found 209 of them in some stage of formation. I am going next week to Dallas, where they are going to build eight in one one fell swoop, and have $71,000,000 in the kitty. That's just Texas "starters". So, don't forget, percentagewise especially, to look beyond the American high school. The American high school now is moving on to the universal free public education grades thirteen and fourteen. As you look at the schools themselves, see how they are reorganizing. The old schoolhouse that you and I knew, oh, say prior to 1960, was a great egg crate arrangement of equal spaces, boxes, called classrooms, strung together like the coaches of a train. Those schools are disappearing as the self-contained classroom itself is breaking up. The walls are coming down. Your new customer in education -- I speak mostly to the private sector -- your new customer in education is going to have great zones of space rather than box, box, box, box.

If you have an opportunity someday in New York, and want to see what's clearly in the wind in the shape of things to come, go out to see Public School 219 in the Bronx. This is a great scoop of the sky. It's a dome of 10,000 square feet or so, presided over by a team of teachers and a team of aides; and they create instant classrooms, the way the Orientals do, by portable screens and equipment, and so forth. If there is any one great change, that the private sector ought to be watching in education -- watch the library. The library at the college level, the way it's going, may very well bankrupt some of our institutions. The cost of maintaining libraries in some institutions, I think it is fair to say, is getting out of hand. The cost of libraries seems to have a trajectory that bears no relation to other curves of enrollment or other uses. The

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knowledge explosion has created a suction on the library, irrespective of other problems of the institution. It has customarily been said that it costs about $25 to have a book on the campus -- by the time you have purchased it and processed it and handled it and stored it, it's about $25. Yet a Professor Folk coming in from the Adlai Stevenson Institute in Chicago the other day told me that the true cost, if you really figure it out in strict cost accounting, is much closer to $40 to keep a book, an active book, on the American campus. With these expenses coming in this volume, many an institution trying to go it alone and without working itself into some kind of network with other compatible institutions of the same aspiration, will have to make the choice between paper and people. And what a cruel thing, that it could have been the book that forced a college to have a cheap faculty. The book of all things should not have been that which interfered with the collecting of the best and wisest people.

Well, therefore, I would say to the private sector here who know how to link institutions -- you are needed, your skills are needed more and more. Institutions are going to give up trying to go it alone, not just colleges, but schools. Go down to West Hartford and notice there, already, their attempt to link. Even the schools of West Hartford, I thought -- and this is a lush, posh suburb -- no longer trying to go it alone in being, in providing information for all children all the time. There will be a division of responsibility; and if you know how to link institutions, you have a hot product for us, because we need it. We just made a grant Monday to the University of New Hampshire to help them figure out how to link the six State Universities, plus McGill in Canada, so that they can share in a continuing education program. We also made a grant to SUNY, the State University of New York, to help them study how to link themselves and share their resources. In terms of organization this is probably the greatest change, that schools and colleges have suddenly and belatedly come to the conclusion that they cannot go it alone. If you know how to put them together, you are much needed.

In sum, I would say it's clear that the biggest change, one of the essential changes in education, is the move away from the group toward the individual. Look at the new schoolhouses coming. They are for individuals,not for standard groups in a standard space twenty-four feet wide, thirty-two feet long, by nine feet high, with a standard teacher with standard preparation for a standard number of minutes peddling a standard body of subject matter. We are gradully finding out how to track individuals. The schools are opening up so that a school can be sensitive to individuals; and you are going to find that, especially if the private sector helps us in education, we'll find out how to give more of the facts, how to give access to more of the facts, from things. Then we will be able to use teachers. The one thing that teachers can never be replaced for is dealing with values, with the meaning of it. We will have fewer fact-dispensers called teachers, but more teachers dealing with values, with the meaning of it. The youngster enters the dialogue possessing some facts which he got from inanimate things, vividly presented; and then he enters the dialogue, and they hammer out what's moral, what's immoral, what's amoral, what's right, what's wrong, what's true what's false, where does it lead us, what do we do with it. There's the highest plane of teaching. When that day comes, the teacher then can return to his ancient trade; thanks to the inanimate things, the teacher returns to his ancient trade -- philosophy.

TECHNOLOGY AND THE CHANGING SCHOOLS

Chairman, Richard V. Brown:

That was both very informative and very encouraging, Dr. Gores -- encouraging to me, I must add, to know that we are not continuing to deal with things -- that is, teachers. We may be freed some day.

We are also delighted to welcome our final speaker this morning, Lewis Rhodes, Director of the National Project for Improvement of Instruction by Television. As you see, he is a good media man, and has his media equipment with him. And we know the overhead projector works -- well, the bulb works, anyway. We tried it. So now Mr. Rhodes' work is cut out for him.

TECHNOLOGY AND THE CHANGING SCHOOLS

Lewis A. Rhodes

Technology does require a change in the environment, as you can see here. My only apology for being here is that I have been asked to talk for fifteen minutes; and those who know me know that I can't even give my own name, rank, and serial number in fifteen minutes. What I want to do is cover three main points. To skim over them, three questions, and then maybe we go into a little more depth in the work session during the next hour. "Technology and the changing school" -- the first point I want to talk to -- is whether technology is just one of the changes in the changing school. The second point will be,does technology have another role, possibly? Is it more than just one of the changes, or is it possibly what makes change possible? Can we have change without technology? And, finally, I want to talk about television and the other school system that Dr. Clark referred to last night.

We do have, as you know, two school systems. One which is an admitted failure -- and the other one which has failed and doesn't admit it; and that's the one we more commonly work with. Well, let me quickly review the context of the change we are talking about to build upon what Dr. Gores and Dr. Bishop said this morning, and what some of the speakers last night said. In education we are concerned, supposedly, with the learner. We talk a good game. We say we are concerned with the learner. For centuries there have been attempts to deal with the learner. In the attempts to change the schools -- we have always had people, educational philosophers, trying to change the schools -- by and large, these attempts have been resisted, bounced off. We haven't really been able to change the school effectively since the Greeks, possibily, as far as the roles of the teacher and the student. This wall, this environment that Dr. Gores referred to, is apparently what is resisting this change; and what this environment is made up of are those things that Dr. Gores said we could kick, those hard things that we could do something about. I'm not sure we do.

Let us consider these elements a little further, these hard elements, these things that can be manipulated -- time, space, the professional people, the knowledge to be imparted, and the students themselves. Given the way we now group these elements horizontally and vertically, what we have tried to do is to create solid wedges within this environment, treating these elements as constants -- to subsume the fact that there is such a thing as a "period", a solid block of forty to sixty minutes; to handle space, again as Dr. Gores referred to it, in terms of self-contained classrooms all about the same size; and to handle our personnel in the same way, as if they were all general practitioners with a common ratio of one to whatever you can afford, thirty, forty, fifty. As if they were all presenting information most of the time, as well as doing all the other clerical chores and housekeeping -- handling most of our knowledge in substantive compartments within this functional compartment; housing it in print; not crossing subject matters, disciplines, or boundaries; and locking our students into groups identical in size and pace, on the assumption that there is such a thing as a third-grade student, a fourth-grade student, as if we could catergorize children in steps like that.

And when we talk about the changing school we look at the last ten or fifteen years, we look at what the Ford Foundation, and Kettering and the Government have tried to do. By and large, they have tried to break this pattern. They have said, let's see if we can free up this environment, let's handle time in a freer way, get into modular scheduling, derived possibly with computers, individual schedules in some places. Let's handle space in a more free way, individual spaces, multi-use rooms, flexible use of space. Let's handle our teachers in teams, let's talk about a role change in the direction of this diagnostician manager of learning that Dr. Bishop referred to. Let's bring in semi-professionals, let's bring in aides who can handle the nonprofessional duties. The whole curriculum reform movement here would restructure the whole development of programming, program instruction as a way of sequencing instruction, no matter what the medium, and the development of the presentational specialists -- television. Television has come in here as a replacement. I mean, the Big Talking Face that John Culkin referred to last night is just a replacement for the Big Talking Face in the classroom. Television has come in here, and in our grouping with continuous progress programs and variable grouping, nongraded structures -- these have all been attempts to break in. This is what we mean by the changing school; and, by and large, it hasn't worked.

When we talk about the changing school, it would be nice if we could have talked about the changed school. But there aren't many that have changed. Because, by and large, all the attempts to break in at one point, into one of those compartments, have failed. Those few places that have effectively come through with comprehensive change are those places that took out those walls and said that this environment is a totality, and you shape one part of the web and you shape it all. You come in with curriculum reform; and this affects the way we use our space, teacher role, time, and all of that. That's why I said that technology does mean you change your environment. The audiovisual approach -- you are trying to slip it in and not rock anybody's boat -- it hasn't worked, especially with television. You've got to rock boats if your purpose is to reach the learner. Those few schools that are effectively changed are schools that have attacked the whole problem. This is a McLuhanish approach maybe, but McLuhan makes sense. Ray Carpenter at Atlantic City last week used the expression (I may have it backwards): "multi-phasic problems require pluralistic solutions." This is what he is talking about. That fact that all of our research has produced "no significance difference" demonstrates the fact that you cannot produce a significant difference by just reaching one element. Again, that's one of Ray Carpenter's statements. So this is what we are talking about. We are talking about the changing school. Now, I ask, is television just one of those changes? Well, partially, yes. Television does fit in here, a way of bringing in a presentational specialist. But, and let me define my term here -- my topic "Technology and the Changing School" -- and I think we are reading television for technology for the purpose of this meeting, and I think I also want to say, read radio when I say television. We are talking about electronic dissemination. It doesn't matter -- radio and television go together, and many of the things to which I am going to refer, and say television, would apply just as well for radio. But every tool really has two facets -- its inherent characteristics and what you might call its strategic and tactical characteristics. We know about television's inherent characteristic, what it can do; and we have tended to treat it only on this level. To go to a simpler analogy, if I may for a minute -- if I were a carpenter building this lectern here, I could use a handsaw, a simple tool, cut all my wood and put it together, and get the job done. I mean, my handsaw has an inherent ability to cut wood. Or I could go to a power saw. Now that has the same characteristics -- it cuts. It is also more efficient. It means, if I were making a lot of these lecterns, I could maybe get quality and quantity. There is an efficiency factor in there. But its strategic value is the fact that I could use it to buy time so that I, as a carpenter, could spend more time in designing this as a functional unit, and giving it its fine polish. I could use that saw strategically, to buy myself the time to do a better job.

Now this characteristic of television, of technology, as an enabling device is one that we have neglected for a great part; and that's what I want to talk about for a little bit now. To do this tactically, to use this strategically, you've got to know what you want to use it for. Too often, we haven't. We've wanted to use television. There have been a lot of studies on the use of television without the question of To Do What? Television may be the answer -- but what was the question? Well, to do what? In order to do anything we have to have objectives that we can state, we have to know what the medium is and can do. At times when we say television, we are talking about the way you design the message; and this is the instructional television we talk about. At other times, we talk about television as a way of packaging what has been designed. Packaging and storing. If this is so, we have to realize this. And at other times we are talking about television as a transmission system.

And this is the area that I think holds the greatest potential in being applied to the problems of education and the changing schools. One way to understand the changing schools is to look at them from the point of view of their problems.

Many of the problems faced by the schools today are in reality communications problems. They fall into three major areas, the first of which comprises problems of movement or distribution of information, either from one place to several places or from several places to one. Those problems included in the first part of this category are threefold.

A: instructional -- limited human material resources which cannot be distributed equally; the equalizing of educational opportunity to the geographically and economically deprived; and distributing a changing curriculum. B: administrative -- communication difficulties and depersonalization as systems of education get larger with the concomitant lack of time and space for adequate meetings. C: supervision -- orientation of new teachers; updating knowledge and methodology of teachers in a world of changing information; and the equal provision of in-service resources throughout an area. Among the problems in the second part of this category, moving information from several places to one, are the inaccessibility of most resources to learners; administrative problems involving collection of records; and the difficulty in supervision of obtaining adequate feedback from the classroom for changing curriculum materials.

The second general problem area includes problems of processing or organizing information, which is normally considered to be the primary role of a medium such as television. They can be enumerated as follows: the lack of sufficient time for adequate lesson design and planning; the inability to provide assistance, such as that of communications specialists, for the design of the lessons; the logistic difficulties involved in using multiple resources within a short period of time in any sequence of information; and the difficulty involved in adequate researching of lesson quality or validating lessons through actual testing with learners.

The third area comprises problems of preserving information or managing time and space. In this category we are not considering processing or changing information but capturing it for further study and analysis. Until recently, any analysis of an individual's behavior had to come from another person, as it has been a logistic impossibility for an individual to see his own actions in a real-life situation. In addition, it has been logistically difficult to preserve non-replicable incidents in education. This includes, not only the visiting expert, but also the master teaching demonstration, the critical experiment, and so forth. It has also been difficult to juxtapose time and space to expand, shrink, to show cause and effect, etcetera.

As a communication medium, television could be applied to these communication problems in education. In retrospect, it appears that while most of our research and effort has been in the area of processing of information, in actuality most of education's current problems are those of moving, distributing, or providing greater access to something that is in short supply. Unfortunately, our chief technological device presently used to deal with this problem is the wheel.

And now I want to talk about the third and last point -- technology and the other school system -- the schools that are not changed, but are changing because they have no other alternative.

In turning back to the flexible environment which we discussed a few moments ago, we can with some confidence say this is where those of us who are in education work. This is the school; it is our ball park. We know, however, that it is surrounded by another environment. This environment -- the society or community -- which,we are led to believe by current research and philosophy, is in some ways more relevant to the concerns of today's youth than is the school, and more significantly, is the critical factor in learning.

In the suburban school this is a positive factor -- for the environment provides the average child with a head start of significant learning before he even enters school, and while he is in school, supports and reinforces him with care, understanding, and application opportunities. In the inner city,on the other hand, this societal environment is a diminishing factor, effectively telling the child, before and after he enters school, that he is different, unequal, will amount to little, and that no one really cares. In the face of a negative environment such as this, the problems of an educator become quite different -- if not totally impossible. Moreover, since the action is outside the walls of our ball park, there currently appears to be little that the educator can do while working in his old environment. The means must be found to extend the educator's ball park to the area where the game is really being played. And when we talk about "extending" man's reach or his abilities, we have to go back to the old definition of a tool as an extension of man. In order to create a meaningful,effective system within this large environment it is necessary that man know and use his available tools.

In these new systems that must be created, the most significant role for electronic communications will be a logistic one. It will be the linkage that makes a true system possible. It will be one that permits cooperation of all in the community who care about and are interested in the development of individuals. This will include parents; peers of the students, themselves; and others in the community, including individuals from institutions in the society working in the area of individual development.

The changed schools in the inner cities will be the real model for the future of American education, since they will be designed around the needs of individual learners. The system will be validated through use with the learners, and will be an example of the only type of research that is feasible today -- empirical research -- which means that these schools will be the laboratories for a developmental, changing system of education keyed to the changing needs of individuals in modern society.

Man has the opportunity now to prove that technology can be used, not only to extend his senses and his limbs, but also and more significantly, to extend his good purposes. A properly designed system will reinforce and reward these purposes, but will not and in fact can not, create these good purposes if they initially are not inherent in the system designer and system managers.

In summary then, technology does have a significant role to play within our changing educational society, not only as part of the change but also in effecting change. It will, however, have little significant effect without the realization that the human element in our system is the only source of the key objectives, the roles, and the directions that the changes must take. If we continue to only make those changes which we believe are technologically possible, there is little hope for ever evolving systems designed to achieve true human purposes.

METROPOLITAN AREA COUNCIL FOR INSTRUCTIONAL TELEVISION RESOURCES

Robert P. Crawford, MACITVR Host:

One of the reasons for my being here at the head table for this luncheon is to give some kind of nod to the local planning group that were responsible for some of the details on this particular convention. Myself, I'm on the committee; and to my far left is Richard Meyer; next to Richie is Dr. Florence Monroe; and then I think Jim Macandrew is over at this table over here, he likes to sit down with the people; and Jim Collier is at this table over here. These people all represent not only our members but a variety of organizations in a local group known as the Metropolitan Area Council for Instructional Television Resources. MACITVR for short. The MACITVR group was selected, logically, because the ITVR stands for Instructional TeleVision Resources, for the local planning.

MACITVR

And we thought maybe it would be very appropriate and interesting to you to share a little bit of information about our local group. It may have some application to other parts of the country. And so, very briefly now, to give you a little background and history on MACITVR from the Industry point of view, is Mr. Henry Senber who is news manager of Radio and Television in the Public Relations Department of the New York Telephone Company. He recently retired as President of the Society of Silurians, an organization of veteran New York newspapermen. He is New York correspondent for the Radio-Television News Directors Association Bulletin and, of course, one of the founders of MACITVR. Henry, would you just give us a few brief words about MACITVR.

MACTIVR

Henry Senber

I was delighted to accept Dr. Crawford's invitation to discuss with the MACITVR group the origins of the group, and looked forward to a reunion with a lot of old friends. Last night, when I learned that the program had been broadened, I was a bit dismayed. One -- because I am sure that many of you outside New York are well ahead of us on industrial cooperation. I was also, when I learned who the main speaker was to be, Mr. Hilliard, I resolved to make my remarks as brief as possible, because I'm very anxious to hear him.

First let me apologize to those of you who have strained epiglotis or malfunction of the vocal chords trying to pronounce the acronym which has been developed for MACITVR, our organization. It can't be done. I will confess that I was trying to spell out something that would have as an acronym macandrew. It didn't work, Jim -- I'm sorry.

I want to make just a very few points. One -- that while my employers take a very serious view of the responsibilities, as corporate citizens, toward education -- and they spell this out on many levels, in many ways -- many ways I don't know about -- this is not my province.

With us today at lunch we have Mrs. Ruth Figel, and Mr. Fred Leary, who are in our educational department, and they have been a great help to me in getting out program materials. You must appreciate that in the New York City area there are thirty-two AM, forty FM stations. There are nine television stations in the City alone. There are hundreds of independent producers, there are television crews shooting for British German, Italian, French, Japanese and Lower Slobbovians stations. And by the very nature of our business they have a lot of questions, they want to know what we're doing about this -- how many transistors there are in Tel-Star. They pour in questions. And by the nature of their business, they all want that information yesterday. Mr. Bob VanZant and I worked together for what really constitutes a Program Assistance Bureau. Trying to get out information as promptly and accurately as possible. With the development of Instructional Television in New York, the requests came into our group. We began to know the people and problems involved, and we tried to help. We thought we could do more for them if we had a longer shot, a longer fuse added. In 1964 we got our film people, and our school relations people; and we got together with Mr. Macandrew and Dr. Monroe, and we sat down at a luncheon and said, "Look, give us a little advance notice as to what you're doing, and maybe we can do a better job for you." And later I talked to Father Dempsy from the Brooklyn Diocese, who broadened my horizons quite a bit on the nature of his problems.

Last spring we started up again, and Richie Meyer joined us, and we came to the question of how to approach the problem of presenting our story -- I say our, now, because I've identified myself with the MACITVR group -- to industry in the best possible way. We learned that the Board of Trade of New York had had a conference between industry and the arts, a very successful one. So from Florence's office we picked up the telephone (good instrument -- maybe we're going to get people to use it some day -- especially teenagers) and we just called cold and said, "Look we're trying to do this -- would you like to hear more about it?" Neal Anderson, Executive Vice President and -- Mrs. Simon, his assistant, who is with us today, too, received us with a cordiality and an understanding and an enthusiasm that was most heartening. The show, I think, was on the road.

Not to speak for my company, not to speak for MACITVR, but to speak for myself for just two seconds -- I don't see why organizations that make films for public relations activity and classrooms can't make films for Instructional Television, for classrooms and the special needs involved. I don't see why organizations which pride themselves on the number of their executives working on school boards wouldn't be glad to have consultants working on programs or series of programs. I don't see why organizations -- again I speak for myself -- that make substantial contributions to education in many ways cannot earmark some of those resources to Instructional Television. The problem again is communication I think the whole field is handicapped and beclouded by a very inexact nomenclature; a lack of understanding of goals, methods, influence, and potentiality. These problems can be overcome, I would suggest to MACITVR and to anyone else who might be interested, by a two-level approach. I would suggest a long-range approach with all the fancy things you want to throw into it -- the stratosphere is great for aerial mapping, but when you want to hit your target, fly low. I would suggest, also, that we do not forget the simple, easy way -- to simply tell people in industry what programs you're working on, and asking them what materials they already have available, without going through the Board of Directors for another budget appropriation. I think this would open the door and bring to you partisans -- partners in your work.

For a final word, you may be surprised to learn that industry knows a lot more about your problems than you suspect. For almost every large organization has an equally large problem in training employees; and as those of you who attended the management conference last summer will recall, many of them, mine included, are turning to Instructional Television techniques to help solve those training problems.

RICHARD J. MEYER

Robert P. Crawford, MACITVR Host:

Thank you, Henry, for giving us your point of view on the generation of MACITVR. Now, let's turn to the educational point of view -- and one of the gentlemen responsible for the development of New York's MACITVR was Richard J. Meyer -- almost Doctor Meyer. Richie is Director of School Television Service, Channel 13, WNDT-TV, New York City, and a Television and Educational Communications consultant. A few good words from you, Mr. Meyer --

MACITVR

Richard J. Meyer

I don't know how many of you picked up the New York Times this morning, and looked at the TV page, but there you can find a problem which is common, I think, for all of us; and that is a little article about a Channel 13 and WNDT presentation Monday night of Tom Lehrer singing The Vatican Rag. The article says there were more than two hundred and fifty calls protesting Lehrer's singing of this song, and I know that on Tuesday morning in my office I received some calls from some of our member school districts who had some comments. I just wanted to quote what Mr. Lehrer has said. As you know, he teaches statistics at MIT as well as performs in night clubs. He said he was "delighted" with the protest;"We need things to stir us up." This has relevance because, I hope, this meeting will stir things up; and when the pieces fall, maybe we'll be able to analyze some of our problems, both from the industrial and the educational areas together.

MACITVR -- you've heard the early background. Now let me tell you that we have done. First of all, we could not have done it without the cooperation of Henry Senber and my co-chairman, Florence Monroe, and Sybil Simon from the Board of Trade. However, you'll hear this story later this afternoon from Neal Anderson. Henry did mention to you some of the unique problems of the New York Metropolitan Area in terms of total broadcast service. Let's limit it now to education. For instance, there are three million school children in the New York Mettopolitan area -- New York, New Jersey, and Connecticut. There are three open-circuit and/or twenty-five hundred-megacycle systems in the schools, in the three States. The New York State network will be fully interconnected by Fall. In addition, there are so many other closed-circuit television operations of one kind or another in this area that we can only guess at the number, and this number changes every day. Now, originally MACITVR, as we thought of it, was designed for educational organizations which were involved in the production of ITV programs for transmission to more than one building. And we got into the first meetings and everyone said, "What about videotape production centers, who then bicycle the tape around? What about these other organizations, and so on?" So in the Fall of 1966, under the auspices of the New York Board of Trade, we met with about twenty representatives from organizations in this area who were actually producing Instructional TV programs of one kind or another. Just to give you an example of the diversity of those organizations, beside the open circuit stations we had Brooklyn College, Queens College, the Darien, Connecticut, Public Schools, the Diocese of Brooklyn, the Archdiocese of New York, Rutgers University in New Jersey, the State University in New York, and so on. We attempted at that time to define our objectives. And this is what we came up with, and it is only a working list.

First, we want to define our production needs as instructional telecasters, needs which could be served by the cooperative effort between ourselves and the business community. Secondly we want to present to the business community through the New York Board of Trade specific recommendations for cooperative endeavors. Finally, we want to evolve specific procedures to implement these recommendations.

Later, after several more sessions, we drew up a list of needs just as a starter. And this list was derived from all of our members, who produced their lists of needs. Henry has touched upon some of them from his point of view, but I just want to go over some of the needs which were commonly agreed upon; and I think those of you from other parts of the country all agree that this is not a New York Metropolitan Area problem alone. So if we could stimulate some action around the country, or if you have done something, let us know.

We asked industry to research its own organizations to locate available material which could be used as elements of ITV programs. For instance, videotapes, films, slides, phonographs, records, audio tapes, motion pictures, filmstrips. Let me give you an example. Suppose we're producing a series -- let's not even worry about what curriculum area -- and we need a shot of a lady with high-button shoes walking down the street. Now, if we were to send the film crew to film a lady with high-button shoes walking down the street, it would cost us a lot of money -- and we're not even going to talk about money. It so happens that in a film produced by the New York Stock Exchange, there is a shot of a little old lady walking down the street in high-button shoes. The title of the film is How Your New York Stock Exchange Works. Now, how do you know, reading the title of the film and the description, that there is a shot of a little old lady in high-button shoes? You don't. That's one of our problems. There are millions and millions of feet of film in vaults in cities all over the country that haven't been shown in schools in twenty-five years, but which could give a wealth of footage and resources for those of us in the field.

In other areas we mentioned experts in all areas on all levels, not necessarily limited to top corporate officers. You've all seen the program where you have the president, then the vice president of General Motors saying, " Yes, I started out as a young man" -- but what about the man who works for the mapmakers at one of the map companies, who actually is the greatest mapmaker in New York City, or in the country? This man is a terrific resource. He knows more about mapmaking than the president of his company, otherwise he wouldn't have the job. How do we get him? This kind of assistance is needed for the entire curriculum of both primary, secondary, and college level.

Another thing, there are talks going on right now -- and I tell you it's still in the talking stage -- to establish some kind of computer library of all of these existing resources which are available today now. We hope to start some kind of pilot project in cooperation with the New York Board of Trade Educational Foundation.

Here's another example -- as industry produces films, pictures, videotapes, we feel that there should be written into the contract, "Cleared for use on Instructional Television" -- for a reasonable length of time. People go out and spend thousands of dollars shooting films, and they don't get clearance rights for instructional television. They say, "You know, we have this great film that shows the Sahara Desert at night, and we can't show it on television because we didn't get a clearance from the camel." So that we've got to put this in before. Another thing, we're asking industry to find ways to enable instructional television to use quality television series of value that have been produced by commercial educational stations, networks, production agencies. For example, The Bell Telephone Hour, Profiles in Courage, Young People's Concert, The Defenders, many of these things can be used, coordinated with some curricular material. But they're not cleared for TV.

As Henry said, we must tell industry what we are doing, in many cases before they send the film crew out. Let me give you an example, Standard Oil or New York Tel or somebody might be doing a film on communication in our modern age, and they might be sending a film crew out here to the George Washington Bridge to do some symbolic shooting of the strands of the bridge. We may be producing a series where we need that Little Light House underneath the George Washington Bridge. Now, if they knew we needed a shot of the Little Light House, they spent all the money to get the crew out there, and all somebody has to do is turn around with their camera and focus it on the Light House for ten frames. With a little credit at the end, "This shot furnished by you-know-who",everybody's happy. But we have to tell them.

RICHARD J. MEYER

Now, so far we've been talking about the sender. As Dr. Clark and some of the others have already suggested, too much time has been given to the discussions of the sender in all of these NAEB meetings. We really should be concerned with the receiver. Or, as we in educational and instructional TV say, utilization; but that gets us into trouble. But there have been some voices in the wilderness for the last ten years who have been crying. You spend a million dollars for production (I don't know where they work), but what do you do about the teacher in the classroom? And now we're told the classrooms won't exist. But anyway, what do you do about the other end of the tube? The point is, not too much has been done in the way of utilization, -- or let's call it in terms of our esoteric group today -- the receiving end. Now the fulfillment of instructional television depends substantially upon knowledgeable classroom utilization.

And now re MACITVR's development. Unfortunately, at the present time both industrially produced and instructional programming have suffered because of lack of training in utilization techniques and procedures. We, MACITVR, are asking industry to help establish the climate that would develop such techniques and procedures. Here are three suggested remedies. We don't know all the answers:

In-service courses regarding television utilization practices.

Mandatory courses in the use of television and other media for all prospective teachers. (We're in the communications age, and we're still not doing this.)

And, finally, a research study of existing TV utilization practices to help us obtain maximum benefits from the "mediocre" instructional TV programs that already exist.

The only other need we talked about was the cooperative production of instructional TV program series, and that means cooperative. Perhaps between instructional telecasters and industry -- I don't know. But let's explore. For the first time educators come to business with an awareness that industry's interest, know-how, expertise, imagination, and resources are vital in solving the current problems, and giving guidance and direction to fulfilling the needs and making instructional broadcasting a rich and full experience for all our population. We hope that our action has started a dialogue between educational and instructional television and industry, not only in the New York Metropolitan area but throughout the entire country.

Robert P. Crawford, MACITVR Host:

Thank you, Mr. Meyer.

Well, there's the story of MACITVR. Where's it going to go we really don't know. But there's one pertinent question -- why not?

Now, as we continue with the theme of our conference, we're going to turn to the main speaker of this luncheon period -- Bob Hilliard has a PhD from Columbia University. He was formerly an associate professor of radio, television, and motion pictures at the University of North Carolina, and at the present time is Chief of the Educational Broadcasting Branch, Federal Communications Commission; and Executive Vice Chairman of the FCC's Committee for the Full Development of Instructional Television Fixed Service; and Chairman of the Federal Interagency Broadcasting Committee. He has several publications to his credit, one of which is Writing for Television and Radio, with a brand-spanking-new edition out this summer, I'm told.

Bob's question for us today is -- "Are You Ten Feet Tall?"

ARE YOU TEN FEET TALL?

Robert L. Hilliard

Thank you for the nice introduction and whether Father Culkin agrees or not, I think I'm not going to spoil that introduction by saying anything. I may just stand here a minute in respectful silence, because who knows when anybody 'll do that nice a thing for my ego again?

People always say that it's a special privilege to be wherever thay are that particular day when they're introduced to speak. And for special reasons, that really is true for me today. New York happens to be my little old home town. I always like to be here; and it's here, in the streets and the subways, that I really feel safe. I expected you to laugh, but what's so really funny is that I mean it I wouldn't feel quite so safe in Phoenix, Arizona, for example; and that has nothing to do with politics or the fact that the murder rate in Phoenix is a higher rate than New York City's. I bet you didn't know that, did you? One always feels more comfortable in one's home town. As John Steinbeck has said, "New York is an ugly city, a dirty city. Its climate is a scandal, its politics are used to frighten children, its traffic is madness its competition is murderous. But there is one thing about it. When you haved lived in New York, and it becomes your home -- no place else is good enough. Now, just in case this gets on TV or radio, I'll have to remember the fairness doctrine, so I give you a different quote, this one from Simeon Strunsky: "New York has more hermits than will be found in all the forests, mountains, and deserts of the United States." And another one from John J. Chapman: "New York is not a civilization, it is a railroad station." And this is a very good one from Irwin Cobb: "There's this to be said for New York City. It is the one densely inhabited locality with the possible exception of hell that has absolutely not a trace of local pride." On the other hand, you may with me prefer Aubrey Mennen's statement: "The true New Yorker does not really seek information about the outside world. He feels that if anything is not in New York, it is not likely to be interesting."

I'd like to think of myself as a true New Yorker, but at the same time I'm glad I'm in Washington. It's where the action is -- although not necessarily where everything else of importance is. You know the little boy in the Midwest whose father was elected to Congress last November, and he learned that his family was about to move to Washington. So he said his prayers that night, before going to bed. And he was heard to say, "God Bless Mama, God Bless Daddy, God Bless Sister, and God Bless Brother". And when he was about to get into bed, he stopped and he paused for a moment rather sadly, "Well, I guess this is good-bye God. We're going to Washington."

And now I will get to my speech, and it is my speech -- I wrote it myself. I'm not taking any chances like that Senator who made a meteoric rise in politics despite the fact that he was a terrible speaker. Most of his success was due to the fact that he had a very able and low-paid speech-writer. And one day this very faithful ghost writer asked for a raise; and the Senator, apparently believing his press clippings, laughed very arrogantly and refused. Later that Senator had to make a major policy speech that his aide had prepared for him. He figured that, as always, it would be a good speech. He arrived at the luncheon with the speech in his pocket; and when he started to read it, he knew that it was going to be a very fine speech. "My fellow Americans, as you know I'm not one to beat around the bush. Today I offer a bold new program for our nation, I believe we can expand our space program, improve and increase our defense posture, increase health and welfare services, raise the gross national product, raise wages, raise profits, and at the same time lower taxes, and here is how we should do it."

Then he turned to the next page; and to his horror it was bare, except for this handwritten note, "OK, wise guy, now you're on your own." And in a sense today I'm on my own, because I propose to discuss with you some areas of communication and education that are not part of the regular duties of the FCC, and accordingly my comments are my own as a private individual and do not necessarily reflect FCC endorsement or approval. Dr. Monroe, Mr. Meyer, Mr. Senber, Dr. Crawford, Ladies and Gentlemen --

There's nothing like a few hard statistics every once in a while to take the silk gloves off the mutual pats on the backs. Did you see the recent reports by the National Center for School and College Television and the National Education Association that indicate only nineteen percent of the schools in this country are using ETV, and only nine percent of the elementary and secondary schools are using closed-circuit television in instruction?

What do I mean, *only* nineteen percent and *only* nine percent?

That's a lot better than the estimates of ten percent and three percent using television three years ago. But if ITV is as good as we think it is, if it is as indispensible to education as we claim it is, that figure should be no less -- unequivocally no less -- than one hundred percent.

Sure, I know: Rome and all that!

But in terms of the progress of the world today, in terms of the geometric rate of expanding developments in transportation and communications, bringing all peoples and all nations together in a mutually many-sided view at the same time, education doesn't have much more than a day in which to catch up!

What percentage of the schools in this country today are using books?

Do you think that the electronic media, that television, are not at least as important to learning and teaching as are books? If you think they are not, I respectfully suggest to you that you are in the wrong profession -- as well as in the wrong century.

Why are only one-fifth of the schools that should be and can be using television as an integral part of the educational process doing so?

I suggest to you that what we should be doing here during the three days of this instructional television conference is devoting our individual and joint efforts to determining *why* this is so, and *what* we must do about it -- and cease spending time rehashing last week's programs and this week's distribution problems and next week's videotape recorder specifications.

Let me suggest to you that the real name of our game is -- revolution!

Television -- just this one medium alone -- is an affective force, changing sets and attitudes of learning and teaching so that the educational process must change in order to take advantage of the medium, and in order, at the same time, to reflect the medium's impact.

Perhaps some administrators and teachers believe that they cannot afford to let education move into the Twentieth Century. It may prove upsetting.

Too often we have gone along with them. We have tiptoed behind them, making soothing sounds about a little enrichment at a quarter to ten on Tuesday and Thursday.

We have permitted television to be used as a frill. Instead of exercising the forceful leadership that we should -- because it is we who have the resources and the ability to create the needed revolution in education -- we have been content to use television as reinforcement. Reinforcement of degenerative, outdated education that is at least a century behind the needs and possibilities of today's world and today's student. We have been content to sneak television through the back door. We have been content to suggest that it is sufficient to get a receiver into the classroom, and that it should be the teacher's prerogative to decide whether it is used or not. And we have considered that much an accomplishment. We have been content to bow gracefully away from a direct impact upon the curriculum and to permit a curriculum coordinator to determine exactly what will be televised so that it can "enrich and supplement" -- not change -- the present outmoded content and process in learning and teaching. And we have considered that much an accomplishment.

We have permitted the media to provide materials that have little relationship to needs, that reinforce a "Dick and Jane" curriculum. We know that television can create a new curriculum; that it has already created a new process of learning for every child outside of the schoolroom, a process that must be brought into the school; and that by its very nature and potential it calls for new content that has value and meaning for the student. And yet we continue to use television to enrich, to reinforce the Dick and Jane materials, the Dick and Jane content, and the Dick and Jane concepts on every level of learning and teaching.

We have been content to put a patch onto ragtag education, when what television makes possible is education tailor-made to the needs of each student.

Let us move boldly, frontally, unhesitatingly into our institutions, into our communities. We have something of inestimable value, and we have got to start acting like it is, even if we have to upset some apple carts to do it.

I tell you this: we who are aware of the potentials of television in education and upon education have at least as much to contribute to -- and are at least as important to -- education in our institutions, communities, and States as are many of the principals, administrators, and superintendents who do not share this awareness and ability -- and it's about time we started acting like it.

I think that all of us here would agree that it is educationally blasphemous, economically corrupt, and slanderous to human dignity and capability to permit a student to be taught such things as parts of speech, factural information, language memorization and drill, and similar materials by a live teacher in a classroom -- when that kind of teaching can be done at least as effectively by currently available educational media, enabling the instructor to be free to work with the students in their thinking, in their aesthetic development, in their moral growth. I think we all agree that we should at least have enough respect for our teachers to grant that they can do things beyond that which machines can do, and that we should cease using them as though they were machines. That we should free our youth in the classroom from the excess time needed for factual learning so that they may devote that time to their fulfillment as non-mechanized human beings; not memorizing, but creating; as people with minds that do not store information, but apply it; as living things with feelings and imaginations to take the mundane and make it beautiful and meaningful for themselves and for all the world.

The responsibility to upgrade and update education is everyone's. Every college president and dean and every board of trustees; every State superintendent and every legislature; every principal and every teacher; every citizen who seems content to see his or her child go through the same educative process we did, as if the rote answers in our today will somehow teach a child how to ask the probing questions needed for his tomorrow.

And our obligation is the greatest, because our understanding of an ability to use that which can create the needed change is the greater.

First, for example, anyone responsible for ITV should question its use as reinforcement for the concept of information memorization with which education perpetuates information and IQ tests used for admission and evaluation of students. Such tests discriminate against the creative person, the person who can contribute most to our world, and favor the person with the retentive memory, even if that is the latter's only attribute.

Second, I don't have to tell you that children and adults spend more time being exposed to television and radio than to virtually anything else in life. Because TV affects the pattern of and psychological orientation to learning and thinking, over and above the content of the medium, we must see to it that a study of the media themselves -- of, at the very least, television and radio -- must become part of every curriculum on every level.

It isn't easy, I know. There are courses on the importance of physical fitness -- but everybody is sitting in front of the television set! There are courses on the importance of literature -- but everybody is sitting in front of the television set! There are courses on the importance of nutrition -- but everybody is eating a TV dinner -- while sitting in front of the television set! But a course on the importance of television! Good heavens! What for!

Third, if we indeed believe that the media are as important and valuable as we say they are, then we must not abort them before they have had a chance to take their place in educational life. We claim that TV, (and the other media), for example, can -- finally -- achieve what people like John Dewey said education should do, but which education has not had the resources to do until now; that is, to put the student into an effective relationship with and control over his environment, to -- simply -- take the child out of the classroom into the world, and to bring the world into the classrooms. Part of our obligation, if we believe the media can make a significant contribution to education, is to seek to free the student from the rote requirements of attendance and the lowest-common-denominator lesson plans and fixed physical limitations. The student should be permitted, be encouraged, be motivated, be guided to independent study and learning -- because he now has the resources to do this well.

Fourth, we have got to stop being insular and isolated. We have quickly got to make our area of ITV -- if that is indeed our principal area -- part of the total technology available for learning. We must orient our special interest -- strengthen our special interest into an eclectic cause. We must not cease to seek a technological complex -- a carrel, if it is to take that already outmoded physical form -- for every student on every level, to provide that student with the fullest visual-aural-tactile-sensory experience possible, the experience that can help him feel and understand and relate more effectively to the world he is living in.

Fifth, we have got to go into the schools, into the forums, into the streets, into the homes, to the principals, to the teachers, to the public officials, to the parents, to let them know strongly, clearly, unequivocally why it is not merely advisable or valuable -- but essential that they change their curricular and administrative practices to obtain the currently best possible education for their children -- and for themselves. Tell them with confidence. Don't ask them with apology. Let them be the first kid on their block with the educational revolution. That's what we should be selling: revolution. But if we are selling our communities reinforcement, supplementary accessories to that which is already outmoded and second rate -- who needs it!

And sixth, and perhaps most important, we have got to make ourselves and our special resources and abilities part of the total philosophy of the modern world. All experiences and relationships of human beings must be part of education, which should not be limited, as it generally is now, to the formal classroom. Because education has by and large abdicated its responsibilities for teaching and guidance in many areas critical to the student's development -- frequently because those areas may be controversial -- does not mean that television, which can so effectively bring the student to the world and the world to the student -- must do likewise.

ITV in this regard goes far beyond the classroom, because our technology permits us to go beyond it; and because we cannot, must not separate the student from the world he is living in, whether that student is a child or an adult, whether in a schoolhouse or an apartment house, whether the grade level is a high one or a low one. If we are in television, then we must serve all, in the varying combinations and interrelationships that reflect the potentials and needs of society.

We should use the media in terms of the total learning process ,in terms of humanistic principles. We cannot -- must not hide behind the noncontroversial platitudes and safe fictional rationalizations of Dick and Jane. We cannot pretend to educate by limiting our responsibilities to that which is historically safe. Howard K. Smith, judging entries for Emmy Awards a couple of years ago, tells how he sat through six solid hours of documentaries. "They were all very elaborate," he said, "and in beautiful color and must have cost a fortune to produce. But not one dealt with the untidy but fascinating world we live in. Most were a good two or three safe centures away from today."

Apropos of this century, the Federal Interagency Broadcast Committee was recently informed by the Vice President of his Youth Opportunity Program and asked to explore some of the ways in which the mass media might be of assistance. This program will attempt to help young people, particularly in the inner cities and especially this summer, so that they may fulfill their needs and their privileges constructively. Here is an opportunity to realize some of the full potential of television.

Some of you are familiar with the closed-circuit television system that was in operation for about a decade just a few blocks away from here, at the Chelsea Houses on the west side of New York City. Closed-circuit television was used in this low-income housing project to bring the school and the community closer together, to help overcome the language barrier between English-speaking and Spanish-speaking children, to bring about an understanding of needs and potentials of people and of the world that can enable all the people in the area to make the most of the opportunities of the modern world that has made them part of each other's life. This is precisely what the relationship can be, in specific terms, between media and society.

ARE YOU TEN FEET TALL?

We must take education by the hair and pull it, kicking and screaming, if necessary, into the Twentieth Century.

If you accept the privilege of being in the forefront of the modern world potential, then you must accept the responsibility. If you accept the awesome privilege of the television machine, then either accept its responsibility or hie thee to a flannel board.

Otherwise you are controlling the means and not caring what the end is. Any end to justify the use of the means is complete abandonment of any semblance of humanity. Perhaps each of us can do what needs to be done by ourselves. But if we can't do it individually, then right here and now, before this conference is over, in small groups or in large groups -- we can plan, and we can do it with others.

Don't let the machines make of you machines to create of others machines -- without regard to where they -- where *we* are going or what we shall do once we get there.

Television is ten feet tall. And you, because you have chosen to be its guide and its master, you are ten feet tall. From this moment henceforth, let no one here stand or act smaller than the educational giant you *must* be.

Robert P. Crawford, MACITVR Host:

Thank you very much, Bob Hilliard, for honoring us with your own speech. As they say -- writ by your own hand .... We appreciate it.

COOPERATIVE APPROACHES TO INSTRUCTIONAL TV PROGRAMMING

George Bair, Chairman:

It gives me particular pleasure to be participating in this conference, because I have the honor to be the Chairman of the Board of Directors of the Instructional Division of the National Association of Educational Broadcasters, which has something to do with the fact that this conference is being held. So, I greet you as representing some 104 institutional members of the Instructional Division of NAEB. As you can see by the printed material that you had, this is a session on "Cooperative Aproaches to Instructional TV Programming". And I think it is useful that some of the members of the panel up here come professionally equipped directly from the teaching profession -- which, it seems to me, at this particular conference thus far, has come in for pretty hard knocks. I think it is hopeful that there are people at this conference who are educators; who have devoted their professional lives to the concerns of trying to reach children; and who feel that it is important to be here, not only to learn, but to give from their experience. And our first speaker in this session is such a person. She is Dr. Virginia Biggy, Director of Instructional Television of the Eastern Education Network. She comes out of a career in education. She belongs to the professional education associations, and I think maybe the best thing I might say to put this in contest is that she is co-author of a book called Spell Correctly, a grade-2-to-8 spelling series. She's faced some real problems with real children in real schools; and Virginia is going to speak to us on cooperative production in far too little time for that subject.

LOCAL, REGIONAL, NATIONAL AND COOPERATIVE PRODUCTION

M. Virginia Biggy

I should very quickly add that as of April 3rd I became Assistant Superintendent of Schools in Concord, Massachusetts, and am now just doing the best I can with trying to finish off some things at the Eastern Educational Network. Now it depends on what side of the fence you are on, whether you think that was a good or a bad move. As George says, all of my professional career has been spent in the business of public education and teacher education,and that five-year fling I had in instructional television was caused by my belief that it was important to push the strengths of instructional television. That I have returned to public school administration does not mean I think any less of the pushing task -- but, in fact, a little bit more. As a matter of fact, I sort of share some of Bob Hilliard's comments, in the sense that I had a speech to make to the teachers of the Concord Public Schools just the day after I got there -- which is a terrible way to begin. The topic was professionalism, and that's the best possible way to hang yourself; and I knew that. The meeting was scheduled before I ever got there, but the weather interfered. So there I was with my bare face hanging out, identifying my point of view about professionalism to a whole lot of people who weren't so sure. I did comment to them, as Bob said you do, that it's nice to be there; and I commented that I was returning with less tolerance and more militancy that I went away with. I had been employed there at one time in a different position. The reason for my "more militancy and less tolerance" was five years spent watching my professional colleagues making jackasses of themselves when it came to accepting new ideas; and this was a source of great concern to me, and remains that.

In that context, since I am to talk about local, regional, and national cooperative production, I should say that the only reason I can talk about this subject is the fact that my work with the Eastern Educational Network was to be responsible at one point for the first network cooperative production, called "Sets and Systems". It was a mathematics series for elementary school teachers, and done under a United States Office of Education grant. Well, we set out to design content in mathematics for elementary school teachers that had not been previously designed. Now, let me quickly say we know from the beginning that we were still going to talk about the number system, etc. That part was not new. What we were trying to do was order the content in a way that would be most useful to elementary school teachers, so they could then take that content and use it regardless of the series that they found themselves faced with in their school systems. When we undertook to do this, we did it on a regional basis -- although actually we might very well have done it on a national basis. We drew together as many people as we could find who represented as many different points of view in mathemathics as we could find, and sat them all down in a long hope that we could arrive at some common feelings and understandings about mathematics for elementary school teachers.

Of course you know what happened for the first few meetings. We settled the affairs of everyone's own school system, own university, own point of view about mathematics, and so forth; but when we got past that point, it was possible for a group of fifteen people representing entirely different points of view, different organizations, to come together and agree that it was possible to identify a body of knowledge, if you will, in the field of mathemathics which was important for elementary school teachers, which could be designed and produced via television for these teachers. This was, we felt,a very significant move, because we were able to show that it didn't make any difference whether it was for Maine or New Hampshire, or Washington, D.C., or New York -- that the content was still important for any teacher at any point to be successful in using any of the "new math" texts that had been foisted upon them in many cases. We produced the series, and it was used throughout the Northeast. It was a cooperative production in the full sense.

The group who participated in deciding who the teacher presiding over the series would be was the same advisory committee. I should tell you an interesting thing about that -- we had an advisory committee charged with drawing up the criteria for the selection of the television teacher; and one thing they said, first on the list, was that the television teacher must be one who can help teachers to discover. Because if the teacher can do this, then watching this teacher at work and using the "Discovery Technique" will help the teachers to do this themselves in their own classrooms. Well, I think that was a noble thought. All the other criteria were such that we were looking for a paragon of virtue. We had twenty-five people nominated. We wrote to them all and said, wouldn't you just

love to make a pilot program for us, and we told them what we had in mind. And about twenty of them wrote back, and said, "Thanks a lot, but no thanks. Don't even mention it to me again. I'm not interested. I don't want to have any part of it. It sounds like a great idea, but just count me out." The other five agreed to make the pilot programs, and we finally came down to three to be considered by the committee. One of the people who presented an audition tape did do exactly what the committee said. Prepare a lesson which involves the teachers in discovering what it is you have to present -- and did it very well, in terms of technique. There were a number of things that needed to be straightened out on production and camera personality and so forth and so on. But what was asked of that teacher was done. The committee selected a teacher who told them in the first lesson that she did exactly what she was going to do, then did it, then stopped half-way through and said this is what I have done, then went on and finished it up and said at the end, "What I did today was" -- and that's the teacher they selected.

I make this point because it's all well and good to talk about how we will find a television teacher who will stimulate discovery, and it's great to write that down; but when the chips are down, when the committee is gathered looking for the person, they forget the principles they had in mind for the selection of the person, and instead decide to take someone who will do it the same old way all over again. (She told a couple of funny jokes; and I have a sneaky feeling that may have been what did it. That was the year for humor.)

Well, anyway, we produced this series by using one of the stations of the network for production purposes. We selected a producer-director who went there to work, though he was in the employ of Eastern Educational Network. We produced this series in Washington at WETA. We designed -- this committee and special members of it with the television teachers -- designed a study guide, a big fat thing, which was by design arranged so that if you used the television series without the guide, it didn't mean as much; and if you used the guide without the television series, it didn't mean anything at all. And the whole idea was to try to point out that it was necessary to have this package deal. Also we had the Educational Testing Service design an experiment for us which didn't turn out very well, but they designed it anyway. We had them design tests to be administered to the teachers at the end of several units so that we could talk about whether or not we were making any progress at all in this program, and then we had pilot centers which involved teachers and leaders whom we trained as part of this whole project.

Now,I could go on forever about the things we learned from this. But I think the most important thing in the context of the topic we are discussing is this. This was a regional production. It was cooperatively designed and, indeed, cooperatively produced. It was possible to get a lot of people to agree that quality content is the most important thing -- and presentation, of course -- and that if we go about it right, it won't make any difference whether it's going to be used in one place or another. A testimony to that, I think, is the fact that as soon as the series was finished, nine thousand teachers in the North Carolina schools were enrolled in a formal course, the core of which was this series. Now, that's for regional production. We've done some other things that lend themselves equally well. At WENH in New Hampshire under a Title III Grant -- if you are interested in all the grim details, Bill Brady is here, and he can tell you all about them. But a series of programs in art for teachers were designed essentially by a regional committee and used throughout the State of New Hampshire, so that's a local kind of thing if you want it to be. But this series can be used throughout the country without any difficulty at all. The things that are in it are important for teachers to know if they want to try to handle their own art program in their classrooms.

Let me move back to local production to indicate some of the cooperative efforts there. As I'm sure many of you know, The 21-Inch Classroom, WETA, WQED, and numbers of other television stations in the Northeast (I happen to be picking on three of the largest ones for the moment) are engaged in producing for the use of as many as a hundred and ninety different school systems, producing materials which can be used in all of those school systems. You know, I think in my old curriculum days, numbers of people used to worry about this, and say, "Well, my goodness, you could never design anything in Lexington, Massachucetts, that you could ever use in Concord, Massachusetts." And that, I think,may still be true; but I think it is possible to design material that can be used in Massachusetts and in New Hampshire and in Maine and so forth. Now, I mention this because I think the business of being concerned about the identification of peculiar information to a given school system has been terribly overwritten, overrun, and overtalked. National textbook sales ought to have wiped that whole thing right off. Everybody knows that as long as you have a choice of five or six or seven or eight or ten good things, you can pick them up and use them.

That leads me to the business of national cooperative productions, and I would like to say that I do not have any concern about this at all. This is from having worked with regional productions and knowing that most of those we distribute through the Eastern Educational Network are now being distributed by the National Center for School and College Television. The percentage of material from the Northeast is very great in the National Center's Catalog. To be sure, we talk funny if we produce the stuff in Boston, but it is remarkable how people in California can understand us just the same. The main thing has been -- and I think we ought to say this over and over again -- the main thing has been: when it was done well,when there was something to be said, when the content was appropriate to the needs of just numbers and numbers of teachers and kids, of course it worked. And I'm not the slightest bit concerned that if we were to set out to design four social studies programs -- and I think we would probably have to do four or five or ten, I don't know exactly how many -- that if we were to set out to design those, and had them to offer across the country, there would be school systems across the country that would have no difficulty whatsoever in choosing one of them, and using it, because it would be either doing one of two things. It would be reinforcing the program they believed in or it would be giving them an edge on a program they hoped would work.

And something else is equally important. This is Bob Hilliard's point, of course, that it's necessary for us to think in terms of television as a leadership activity. I certainly would think this. We did this with "Sets and Systems", the art workshop is certainly leadership, the kind of thing that 21-Inch Classroom did in "Meet the Arts", which is a program designed to serve the purposes of one hundred and ninety school systems in the State of Massachusetts. It doesn't mean that people in Kansas wouldnt be equally interested in meeting the arts, particularly if the program has variety, has competent people working in and on it. If the material that is useful for the teachers is available, this can be a national presentation. Why not? The one thing I suppose everybody is worried about is that we would get only one. Well, I think we have no concern about that at all. For one thing, the competition element will see to it that we have three, or four, or five. As long as they are good, as long as we can choose from them, I would see no problem at all in what could be described as "national cooperative production".

We have learned so much in the last few years about how to get people together, to sit down and talk about the common elements of a program that we have in mind to design, that I'm sure we have learned enough from that to know that with the proper consideration of the organizations involved, we can do it easily. Now I quickly say that it would be wrong of us to sit down and decide to design a program for elementary school teachers to introduce the linguistics approach, whatever that is, to them without consulting with the National Council of Teachers of English. That would be stupid. Just plain stupid. The National Council of Teachers of English might not care to have anything to do with us, but they ought to have the opportunity to say thanks a lot, but no. But it would be stupid to decide to design anything of that sort without talking to the people who are engaged in the design of materials for the upgrading of instruction; and I think that if we just remember this, and do it over and over again, we are not going to begin to have the difficulty that was forseen.

Five years ago -- I guess it was or a little more now -- when we first began the Northeast Instructional Television Project, the first thing we were to do -- it was the charge of our U.S. Office contract -- was to gather together groups of people to talk about a number of things. Elementary education was one, and secondary education was another. And we did. We got them all together. We used to come here to New York to meet; it was better to bring them all away from home. And we got them all to sit in one room. Mary Jane Phillips will remember the elementary education group, for which I served as the Chairman. And we had people from Pennsylvania and Connecticut and other States. Every State in the Northeast was represented. We didn't slight a single person. We had State Departments of Education represented, we had Public School Administrators and Curriculum types, and -- we didn't have any teachers, come to think of it. Maybe because they couldn't get out, I don't know. Anyway, we all sat down and talked about whether there was anything -- just anything -- that could be done, or ought to be done, for all the teachers or for all the kids in the Northeast. And we had three dandy meetings, at which every time we raised that question, someone would say, "Well in Pennsylvania we --" and, "We have taken care of that. That's no problem to us. We do it this way". And then someone else would say, "But in Connecticut we did that five years ago, and now we do so and so and so".

And we patted one another on the back for those three meetings. (They were delightful meetings. We learned a lot about each State but we didn't learn a damn thing about what we could think about in terms of basic needs.) Well, in an effort to get them away from that, someone suggested that perhaps the participants might go back to their local States and make a list of the mandates that the legislatures had made for instruction; and everybody did that. That seemed like a dandy task, you know. You could go directly to the State laws, and pick all this stuff out, and so forth and so on. And we tabulated all that, and -- guess what? In about eight of the nine states it's important to teach about alcholism in the secondary school. So then we inquired, "Well, who does?" And we discovered that nobody does. Just "important to do it" -- but nobody does it. So we talked about the possibility of designing a series on alcoholism which I thought had great merit, because you know the committee itself could have a number of experiences in the preparation of it. We were afraid to do that. That's how we happened to get into the mathematics series. That was safer all the way around.

I think there's almost nothing left to be said about this whole matter, except one thing I would point out, that I think "Parlons Francais" is a perfect example of the national use of some television programmings. I should also say that during the time "Parlons Francais" was introduced in the State of Massachusetts, I was terribly busy talking on panels with people who thought that if we just introduced foreign language instruction in the elementary school, we could save the world. And I didn't think that, and I don't think so now. But at the time that we were talking about it, there was not one person who thought that we ought to give it any more consideration than simply to take "Parlons Francais", because it was a good program and it was well done, and it was there, and it was a package and people could use it. And then nobody said, "Well, now, I'm not sure that this is the way it ought to be done." Every single school system opened up its arms and said, goody, goody -- we'll use this, because it will meet a need. And I think that may be the clue to the whole thing. I really do believe that our problems in terms of designing material that will fit one part of the country and not the other are just over; because the needs are, Lord knows, great enough so that if we can just get enough quality stuff, everyone will be free to choose what will fit his peculiar needs; and his needs will be just like those of at least a hundred other places in the country. I think it is going to give us great opportunity to work toward multiple production, so that we can have six and seven things to choose from, and be sure that they'll be used wherever we need them.

George Bair, Chairman:

If there are any of you who as a result of this conference would like to make some contributions on the series on alcoholism, be sure you check first.

Our next speaker is Dr. Edward Maltzman, with Sylvania. Dr. Maltzman also comes from a professional education background. He holds an MA and an ED Degree from Boston University. He has taught at both the secondary level and at universities. I think it is past time that a representative directly from industry began to speak to the concerns of all of us here, so without much further ado, Dr. Edward Maltzman.

THE ROLE OF THE LEARNING INDUSTRY AS A SOURCE OF PROGRAMMING

Edward Maltzman

In the talks presented thus far in this conference, we have heard a great many problems raised in various aspects of education. The presentations have been excellent, and it would seem that most of the important issues and questions have been touched upon. There are, however, a few aspects of the problems yet to be mentioned which bear significantly upon the concerns of this conference.

New technologies give rise to new terminologies. Over the years, we have come to expect this. It is interesting, however, to find the term "learning industry" in use and in the topic assigned to me, THE ROLE OF THE LEARNING INDUSTRY AS A SOURCE OF PROGRAMMING. I take it that the term is meant to encompass the numerous companies concerned with developing, manufacturing, and selling the wide range of devices and media, including print materials -- that is, with hardware and software for use in education. The "learning industry" term coupling is a child of this technological era. It is the "in" thing for advocates of technology these days to say that they are concerned with learning, not with instruction. But, in view of what we have been hearing at this conference, we might properly raise the question as to how much of what kind of learning is being produced.

Studies comparing traditional methods of instruction and the newer technological methods have too often produced the finding of "no significant difference." This is very disturbing. For if the use of the new technology produces no significant difference, why bother? Why make the investment? If the use of technology merely does as good a job or as poor a job as is being done today, then most of today's problems remain untouched.

Perhaps, the realization that learning is not easy to come by or to produce is why this same industrial aggregate is also called the "knowledge industry" or the "education industry." However we call it, I believe the existence and rise of this industry is justifiable and necessary.

EDWARD MALTZMAN

I believe that in a partnership, perhaps yet to be established, with the educational community, new and important inroads will be made in making education produce more learning; in making education a quality thing, as well as in making it available wherever it is needed.

The partnership I speak of is one in which each side, industry and education, understands the role of the other, and that the name of the game, the common goal and the currency of education, is "LEARNING"; that each side has something of value to contribute; that both sides are intimately involved in any educational systems approach involving technology; that it will take the best cooperative and sincere efforts of both sides to meet the educational challenge. It must be realized that the tremendous educational job ahead of us cannot be accomplished by either side alone. To begin to understand the role of industry, we must examine the nature of the partnership just mentioned, and then examine some essential extensions to the educational technology paradigm which represent concerns common to both industry and education.

The partnership, of course, is between education and industry. On the education side, the teacher's job is to get the students to learn. This means to present the material properly; to get the students to interact with the material; to have the students make the appropriate responses, both covert and overt, to the material; to provide reinforcement and feedback. To accomplish all the above is no simple task. There is just so much the teacher can do in the classroom and in the traditional educational context. Also, there are a number of things the teacher simply cannot do. The teacher needs and can use technological assistance.

On the other side, industry must understand and appreciate the teacher's task and the educational processes involved. Its efforts must be directed towards dealing in essential ways with implementing these tasks and processes. Industry has learned that hardware by itself is mute. Hence, the concern for software, for programming. But industry is also discovering that it is not simply a matter of "Here is the hardware, and here is a program -- now go to it". This, however, has generally been the case in the past. Educators have indeed considered they were applying technology when they would use, say, an overhead projector in the classroom, or have their class receive a program over television. But this constitutes a minimal and inadequate use of educational technology. The more appropriate questions would be: which of the educational tasks and processes mentioned were facilitated thereby? Simply the presenting of information may not of itself be sufficient. It usually isn't. Similarly, imitative or rote exercises may be missing the essential learning factor -- and only operating to bore the student.

This brings us to the second consideration, the extensions of the educational technology paradigm. "Educational technology" is generally used as a singular term, but comprising two components, hardware and software. As we have indicated in this discussion, this is too confining a use of the term. Educational technology is best considered as a multiple term comprising at least four components. Thus far, we have talked about the two most common components, the hardware component and the media component on which is carried the program. There is a third component, which we will call the analysis of learning content, which deals more directly with the program proper, with the behavioral specifications of the concepts involved, with what goes into the program and how the program is constructed. In this component we are talking about the handling of the subject matter so as to facilitate the processes operating in the classroom mentioned earlier. We will illustrate the points here by using LEARNING TO READ MUSIC as the subject area...a difficult subject, as many of us know.

Consider what is involved in music reading. There is the knowledge of keys, the staff, names of notes, time values; there are relations of notational symbols to keys or positions on instruments; there is the knowledge of the relationships between notes in terms of intervals, chords. And we can list many,many more.

Again, by the analysis of learning content, we also mean specification of the behaviors involved. Continuing with the illustration, we note that some of the concepts deal with relating visual symbols to physical positions; some deal with naming notational intervals; some with naming tonal intervals. In other words, some behaviors are verbal, identifying that this note is G sharp and that one is C, and so on. Some deal with non-verbal behaviors such as listening to two tones and identifying them as constituting the interval of a third, or a sixth, or whatever. Other non-verbal behaviors deal with discriminating rhythm organizations, two beats and four beats, and so on. From this we can see that music reading involves a vast array of concepts, dealing with verbal, non-verbal, and motor behaviors. Relating and organizing concepts and behaviors in effective instruction-learning modes are not simple tasks.

With the specifications of concepts and behaviors, we come to the incorporation of a fourth component in educational technology which we will call the psychological principles of learning and the instructional procedures component. When the concepts are defined and the behaviors known, simply explaining or demonstrating these is not sufficient. Instead, appropriate principles must be brought to bear, and appropriate procedures must be constructed for the kinds of learnings involved.

For example, which learning principles and instructional procedures would be most appropriate for developing non-verbal knowledge and skills, such as in recognizing the relations between tones heard as seconds, fourths, or sixths? Another example, which learning principles and procedures are most appropriate for developing motor and kinetic skills, as in playing an instrument? Is it really the case that most people find music difficult to learn because they are "unmusical", or is it that we have not yet learned to deal effectively with those kinds of knowledge and behaviors? Recent evidence indicates the latter to be the case.

From all of this, it is simple to see that being an expert subject-matter specialist may not be sufficient for being an expert for developing instructional programs incorporating technology. From all this, too, it is simple to see that merely providing an ingenious device and a program may not be sufficient, or educationally effective.

Here in brief, and in greatly simplified form, we have presented a four-component analysis of educational technology -- hardware, media, analysis of learning, and learning principles and procedures -- which applies to every subject area. Some of the detail I have gone into may at first seem remote from the usual type of industry concern. Upon reflection, however, it should become quite evident it is just such detail that specifies something of the in-depth nature of our overall industry concerns in this era of educational technology. I have attempted to indicate that such an expanded view of educational technology can materially help in understanding the needs of our educational customers -- which assuredly is a constant industry concern. It should help each segment of the industry come to grips with educational technology in its own way and for its own valid purposes. Above all, it should help in making effective that partnership which must exist between education and industry.

THE ROLE OF THE LEARNING INDUSTRY

In summary then, the role of the learning industry as a source of programming seems to me to shape up along the following lines: Programming should and can be a close partnership between industry and education. Industry should not look at hardware and programming as separate entities. Indeed, the hardware must be an integral part of the overall instructional program. Hardware functions and program functions must interrelate, implement, and support one another. The technology thus provided must be geared to assisting the educator in carrying out and accomplishing those valid functions for instruction and learning he cannot otherwise deal with, as he knows he must and wants to do. The partnership I visualize between education and industry is one of mutual cooperation, not one of rivalry. New and exciting relationships will be forged in this partnership as technology expands, and as we learn to make technology more and more effective for the educational jobs to be done.

In closing, I should like to recall a cartoon I saw a few years ago, the moral of which will be quite obvious. The cartoon was made up of four panels. The first panel pictured a teacher standing in front of a class, pointer in hand, and pointing to the blackboard on which was written 1 x 7 = 7, 2 x 7 = 14, and so on. The teacher was obviously conducting a drill in the table of sevens.

The second panel pictured a man standing in the door with a heavy book under his arm marked AV Manual. He was waving his hands from side to side, in the manner to indicate, "That's not the way to do it."

The third panel pictured a classroom empty of students, but with a great deal of work going on -- electricians fixing lights, carpenters hanging a screen in front of the room, another one building a table in the back of the room.

In the fourth cartoon, the class was reassembled, a projector placed in the rear of the room projecting onto the screen. The teacher was standing in front of the screen, pointing to the screen on which was projected 1 x 7 = 7, 2 x 7 = 14.

Chairman, George E. Bair:

Our final panelist for this session needs no introduction from me, since he has already been handsomely introduced by the MACITVR speakers who saluted his contributions to their program and efforts during our luncheon session. He is, of course, the Executive Vice President of the New York Board of Trade and,I might add, chairman of Mayor John Lindsay's Task Force on Noise Control -- Mr. Neil Anderson.

UNTAPPED RESOURCES OF THE BUSINESS COMMUNITY

Neil H. Anderson

Looking over the credentials of the other speakers and the credentials of my fellow panelists and the credentials of all of you here, I feel somewhat like a lion in a den of Daniels; and hearing the multi-approach called "garbage", I hope that I don't fall into that category or classification when I am through. I think I have a responsibility to do several things as the anchorman here. One -- to bring into focus what I think is a new day in the part of business as it relates to our social environment; and, two, what the New York Board of Trade as a business-civic organization is doing to keep in step with this need, and in some measure to point out some of the guideposts along the road on which I think we can form a very effective partnership.

You know so often we are asked to give a road map, and it reminds me of a story about a Jewish Rabbi and a Catholic priest who were fishing buddies. They discovered that the Lutheran minister in the same community shared the same deep interest in the sport, so they invited him out to their favorite fishing hole one afternoon. And after about an hour of fishing, the Rabbi put down his fishing pole, got out of the boat and walked over to the shore across the water to get some more bait. A few minutes later, he walked back; and the Lutheran minister had never seen such a demonstration of faith. And a few minutes later the Catholic priest repeated the same trip across the water. Well, about this time the minister told himself that, after all, the Lutheran church was based on faith; that he, too, could demonstrate this. So he proceeded to put his fishing pole down, and he stepped out of the boat -- and down he went. And they pulled him up, and didn't say a word. He sat down deeply chagrinned, and again went into deep meditation and prayer. And attempted a second time, and again went down to the bottom. And again they pulled him up and back into the boat. And finally the good Catholic priest couldn't contain himself any longer, so he looked over at the Rabbi, and he said, "Shall we tell him where the stones are?"

I'm sure many of you have heard the story before, but I think it is apropos; and I hope in the few minutes that I have, somehow we can identify some of the stepping stones that will lead to a more effective working relationship between business and you people who are dedicated to the education of our young people and our adults.

The New York Board of Trade is a business-civic organization about a hundred years old, started primarily to foster the interests of business. But fortunately it had its beginning in Cooper Union, an educational institution. Somehow I feel that the beginning pointed it towards a greater social responsibility, even though it was a hundred years ago. Since that time, up until probably ten or fifteen years ago, I think the Board of Trade, like most business organizations, shared the philosophy of Calvin Coolidge -- that the business of business was business. But I think that we have entered a new day, and I think any thoughtful perusal of both business publications and the daily paper will indicate a great social awareness that is developing. In yesterday's New York Times I came across the results of a survey made of some forty-five leading oil executives, a report which in substance said that these executives think the social good is compatible with the present economic system as long as the profit motive is safeguarded. And they further go on to say that business must become involved in the social problems. Well, the Board of Trade is involved in this total thing of environment, and we're involved in air pollution; we're involved in noise abatement; we're involved in transportation; we're getting involved in the urban problems; cultural progress; and, very important, education.

Just as late as Monday I had a meeting with the Chairman of American Can, who has a deep, abiding conviction that management has a deep and abiding role in social affairs. I invited him to become a part of the newly formed Educational Foundation of the Board of Trade, which I think will break new barriers as far as business participation is concerned. And he documented at some length what his company and his industry have done in terms of science education, in terms of tremendous financial outlays; in terms of "retreading the science teachers" over a period of six years in the secondary schools. But when we unfolded to him the plans we have for the total-environment involvement of management, his eyes lit up; and he readily agreed that this was certainly the last frontier and one that he certainly personally would want to participate in, and would be eager to have others join in. So I say this at the outset that in spite of the criticism -- and much of it justified -- of management's indifference to what we consider social problems -- and I think much of it is a result of ignorance, of misunderstanding -- and I think, to use the broad sense, education does hold the key.

We think about the community, and I think just for the sake of definition I'd like to repeat to you Webster's definition of a community as "a body of people living in the same place under the same laws". And a corporation, according to the same source, is "a body of persons authorized to act as a single person". Now the important and basic factor in both of these, then, is the individual. Whether living together or working together, it is the individual man who constitutes the community and the corporation. Now, you have mentioned this word concern; and, believe me, we are all concerned with education. We're concerned with the tools of education. But I think our greatest concern should be the individual, whether it is the student, the teacher, the administrator, or the business man; because we are all individuals first, and then we fall into our respective categories. And I submit that I think if we put our focus on the individual and his needs, I think we are going to come up with much better programming, much better communication, and much better results.

The individual today, whether he be in business or in education, is looking for a source of inspiration. He's looking for a sense of purpose, and the previous speaker mentioned purpose. About five years ago I had the privilege of a rather lengthy discussion with Dr. Henry Wriston,who headed up the National Goals Commission under President Eisenhower; and we discussed at great length the lack of purpose in this country, and specifically went into the fields of business, of the Arts, of education, and government. And we agreed that the common denominator or lack was a sense of spiritual values. That materialism had really clouded the vision which this country and any great nation is founded upon. And this wasn't to single out this country for indictment; but I think it was an indictment of an attitude of indifference; and I'm grateful to say that I see a renaissance and return to the sense of quality. Just yesterday I received in the mail -- and I urge you to get a copy of it -- the Royal Bank of Canada's Monthly Letter. It is on the quality person.

Today we hear of the science, and technology, the art and science of management. We see that the science of management and our technology have produced the quantity of our goods. Yet the answer to our quality is in the art of management; and I think -- and again I am speaking as an individual -- I think all of us have labored under an illusion, a misapprehension of the distinction between education and the educational system. And I think too many of us have become enamored with the system, and have lost sight of what education is, and what its ultimate is. And I can document business and its growing concern. Jack Straus, the head of the Macy organization, recently addressed his own fellow department store executives, and he said, "The service is getting so bad in our industry you don't even get it in the complaint department." I talked not long ago with the head of the Chevrolet Division about their problems, and he said that production is no problem. He said, "We can produce more cars than can be sold, but we have always been plagued by the quality" -- and if you know what Nader did to General Motors... But this is not exclusive with the automobile industry. We are confronted today with the need for quality, and I submit that you people here in this room are pioneering a tremendous tool that, believe me, is so little understood in industry that it would appall you. That if you were to establish a relationship with business on a man-to-man basis, giving them a complete picture of what instructional -- not educational TV -- but what instructional television is, I don't believe you will have a problem in mustering the support and participation that you want. Just yesterday I heard about a meeting in which they outlined the industry's sponsored materials and proceeded to an evaluation; and, believe me, instructional television wasn't even mentioned. You're not even in the ball team. I know there are exceptions. But those exceptions will never turn the tide. Now, I submit to you that within every community -- and you represent just about every part of this country -- there is a Chamber of Commerce, or a Board of Trade, or a business organization that has thoughtful management, who are as concerned about education as you are. And if you would go to them and say, in substance, we have a tremendous tool that will help overcome the criticism of our lack of quality; we have the means to reach every child in this country -- I'm just as confident as I'm standing here that you would get not only a favorable hearing, but enthusiastic support. And the reason that we don't get more support for those projects and programs that we ourselves know are right, is the fact we have failed to communicate.

You know, someone has to take the initiative. You people know more about instructional television. I think the responsibility initially rests with you. It's an opportunity, to go to business, to go to the Chamber of Commerce, and set up a program, and set up a meeting, and provide them with an insight not only agreeing what your needs are, not what you think they are, but what you and they think together your needs are. What you think the answers are -- not what you think, but what they think. Pool their thinking. You've got some tremendous thinking people there, and you'll come up with a program that will answer your needs -- which are, basically, the needs of the community. You're not isolated. You're an integral part of that community. Now, the businessman has isolated himself, probably voluntarily, to keep the store, as it was said -- to produce the jobs and the taxes that keep this economy going. But he recognizes that the economic and political and social elements of any community are literally one. You can't separate them, any more than you can separate the temperature and the moisture and the wind in our atmosphere. They are one and the same thing. Today, urban problems are paramount. And I think it would be well if we differentiated between the word ghetto and the word urban. The ghetto is not the urban society. It is the problem of the urban society. Now, with what business has, and what instructional television has, let us form a working partnership. You have the medium; you have the messenger -- but be sure you build a partnership so that the message is worthy of the messenger.

VALIDATING ITV LEARNING MATERIALS

Nils Wessell, Chairman

I suspect that all three of these gentlemen are well known to you. I will, however, presume to give you a word about each of them in addition to the word that appears on the program. The first speaker is P. Kenneth Komoski, who is presently Director of the Educational Products Information Exchange. What the conference program does not say is that this is one of the programs, one of the projects of the Institute for Educational Development, of which I happen to be President. I mention that, because I am waiting with great interest to hear what Ken has been up to these last several months. He is a graduate of Acadia University with graduate work in Political Science -- and I stress the Political Science -- at Columbia. His educational career started with the headship of the junior high school of the Collegiate School in New York City. He then became President of the Center for Programed Instruction for Educational Technology at Teachers College. He is on this program for a number of reasons. I suspect particularly, however, for the reason that he did head a two-year demonstration study in fifth-grade Social Studies, which did address itself to the theme of this session, "The Validating of ITV Materials".

VALIDATING PROCESS IN ITV

P. Kenneth Komoski

As we have heard in spades during this conference, there are a number of things plaguing education -- but one of the things that's plaguing it is that we are almost more than ever involved in a good deal of word-magic. We've got lots of new names for old things, and names that cover very sophisticated or subtle concepts that are not really clear. And as much as I would like to do a number of things this morning, I'd like to tell you in detail about two years devoted to trying to create a validated series of instructional lessons for television. I would like to tell you about the cost in time and money and in the hides of the people who were involved in it, and what an extremely difficult process this is. Perhaps we can get into this in the work session. I will make a few remarks about it before I am finished, but it's not really what I think is important for me to talk about at this point.

What I am going to attempt to do in a very few minutes is to define what we mean by validating, at least what I mean by validating ITV. And it may be that I would be covering a good deal of pretty simplistic ground for some of you. Perhaps for all of you. But I think it is important that we try to understand what this so-called process is. The word validation in education has to do mostly with the idea of validating tests. There is some similarity between the validation processes for tests and those for instructional materials; but not so much as a lot of people, I think, infer or assume. And rather than get caught up in an attempt to make that distinction, I'd like to point out, very briefly, some of the kinds of validation that have gone on in education.

It seems to me there are three types of validation. One, which is intuitive, has to do with whether a thing is valid on the face of itself; and you simply might, in this case, take a series of lessons and ask some experts whether you think these lessons teach, whether you think they will teach. This is what is done in most cases in our attempts to validate instruction. You bring in the best people you can find, you sit them down; and they review what you have done, and say, "Yeah, it's valid in terms of the subject matter being taught". And they make some inferences about how valid it is as a teaching instrument. And that's not what we are talking about, it seems to me, when we are talking about the validating process in developing instructional television materials or -- and this is an extremely important point -- or in the process of validating any instructional materials, not just television materials. The process that we are talking about here is generalizable to all instructional materials. It's just that in my experience in attempting to do this for television, the cost of developing validated instructional materials is, it seems to me, considerably more than that of attempting to validate printed instructional materials. So the first kind of validation -- and I would think this represents this attempt to intuitively validate, to see whether a thing has face validity or not -- I think is probably done in about ninety percent of our attempts to validate anything in education today.

The second kind of validation I would call a rational validation, where you attempt to apply some sort of rational, analytical technique to a set of materials -- and again this is after the fact. The materials had been created, and somebody looks at them says, "Now, I'm going to analyze these materials, try to make clear what they are trying to do, and then make some judgments as to how well they will do it, make some predictions out of this". And this is also a fairly common procedure. This is done in some cases, and has been done in some cases for years, by the more responsible developers of instructional materials. Now, we're not talking about that kind of process, it seems to me, when we are talking about validating ITV in the sense that the word is used here today.

Now, what are we talking about? Well, we are talking about a process that I think grew out of the so-called programmed instruction field. As a matter of fact, John Barlow, who was a professor at Emory College when programmed instruction first began to appear about late 1961, said, "I think what we ought to call this is _validated_ instruction." And what did he mean by this? Well, he was talking about instruction that had been created, based on a set of carefully specified objectives, materials developed to achieve those objectives, and then tried out, developed in what has been called an iterative process. Iterative is a word that I'm sure I know the meaning of; but I think it means you try it out, and you get feedback, and you see how well it's achieving the objectives you're trying to achieve, and then you try it out again. And through this sort of give-and-take process you develop a validation process which I think needs to be called empirical validation. It's not intuitive validation, it's not rational validation based on some sort of rational analysis of _after the fact_, but an empirical process which we hope takes us closer to something which is validated -- and I realize I sound as if I'm just using the word _validated_ without any real definition here, but just hold on for one moment -- it takes us closer to something that is validated than any of these other processes, the intuitive or rational.

This attempt to empirically develop materials aimed at a set of objectives I think suggests what Webster says about the validation process: "Founded on truth, capable of being justified, well-grounded and sound." And, interestingly enough, as a third definition: "efficient and effective" -- which I hadn't myself related to the word _validation_; but certainly it was something that all of us who have tried to develop validated instructional materials, empirically validated instructional materials, had had in mind. That the materials should be efficient, and that they should be effective. Now, I made the point that this process of developing materials through this iterative, empirical set of techniques, constantly trying to see whether they are honestly achieving what you set out to achieve, honestly achieving it -- I made the point that this is generalizable to the creation of all instructional materials. And zeroing in on ITV and the validation process for ITV, I want to open this and say I'm talking about a process which is applicable to the development of all instructional materials. And this process of empirically validating materials -- it's a process that we'd better pay close attention to. That we had better do this because we're not involved in educational technology -- and I'll use this term to represent the broad range of developing educational materials, whether for television or books or film or whatever -- we are not involved in a scientifically based technology. We don't have a predictive technology. We have an empirical technology, which means we'd better stay pretty close to experience with these materials, knowing what they do, and honestly getting the picture of what they can do and then entering into this iterative process of improving them as we go. Because if we don't become empirical technologists and stop acting as though we have a scientific set of principles that we can use in a predictive nature, we're in trouble. We can't say, "Here are the objectives we want to achieve; and now we've got all this wonderful research evidence; and we now have these techniques coming out of this research, and if we just apply these techniques, we're going to get the results we want." We don't have that. It doesn't exist. Now, we've got to understand that by validation we're looking for a process founded on some truth. Truth of the facts as we see them in an empirical way, not an intuitive or highly rational, over-scientific way -- an approach of scientism, rather than science. We've got to admit what we've got, and be willing to live with it. And recognize the tremendous responsibility that we have to validate what we are doing empirically; because if we don't, we are, I believe, on the verge of building the grandest, most expensive, suit of the emperor's new clothes that anybody has ever not seen.

Now, I started out by saying that the process of empirically validating materials for television is extremely expensive. We don't have time to discuss that problem here. It is a tremendous problem. I hope that in the work session we can get at that problem. Certainly we are not going to solve it. But now is the time to look at the word validation as a word that will introduce an honesty, an integrity, into the development of instructional materials. We can't look at validation as intuitive validation in which, if you can get somebody like Ed Cohen who really knows instructional television to say, "That's good", then you can use this statement, and say, "Well, now, that must be good." And we go around saying it must be good, and we buy materials, we use materials -- we really don't know what effect they have. So, when I use the word validation, I'm talking about empirical validation; and I'm talking about it as applied to all types of instructional materials; and I look at the process as a process that may yet save the emerging empirical technology -- not scientific technology -- of education.

Nils Wessell, Chairman:

Thank you Ken. I'm sure your remarks and your candor have provoked many questions in the minds of your listeners. They will have to be saved, however, until the sessions following this general session. Our next speaker is Edwin G. Cohen, who is presently Executive Director of the National Center for School and College Television, a post he has filled since the organization was created in 1965. Immediately prior to that he directed the National Instructional Television Library Demonstration Project, a project that led to the establishment of his present organization. In looking into his earlier history, we find he was, prior to his work with the Library Demonstration Project, Executive Producer at National Educational Television here in New York City; and there is a long list of successful materials which he has produced or helped bring into being. He is a graduate with a Master of Science Degree from

EDWIN G. COHEN

Indiana University, a Master of Arts from the University of California, Los Angeles, with prior degrees, Bachelor of Arts and Bachelor of Science from the University of Texas. Obviously, he believes in pairing degrees -- with two Bachelors and two Masters, what that means I should call him I don't know.

STANDARDS FOR ITV PROGRAMMING

Edwin G. Cohen

The question of standards for instructional television programming I think is a very flattering title, in terms of instructional television. There is something that connotes quality and forwardlookingness when you are talking about standards. In point of fact, we in instructional television have pretty much divided our standards, I think, into three general areas, even though we may not have a concrete standard in any of them. The first general area where we have been concerned and have talked about standards has been in the area of the technical or engineering aspects of the recording medium that we have used, which has predominately been videotape. We have been concerned, and understandably, with the picture quality and with the sound quality, but in a rather negative sense. That is -- is the picture bright enough and clear enough to be seen, so that all of the meaningful details can be comprehended by the viewer? And is the sound clear enough so that it can be understood? By and large, we in instructional television -- or school television, if you will -- have been following the standards that have been established by NET, who in turn have been borrowing the commercial broadcasting standards and those of the SMPTE, and abiding, as we all must, by the applicable regulations of the Federal Communications Commission.

When you look at these standards, however, I think it is right to say that most of the instructional television material that has been produced in the United States has been produced at the local level, where producers did not feel that they were bound by the standards, because the materials were not exchanged through NET or any other kind of exchange mechanism. As a consequence, just offhand, from the analysis that has been conducted on these materials, it would appear that most of it probably does not surpass -- that is the kindest thing that one can say --

the minimum standards that have been created for audio and video quality. The question that has been more recently asked, and is probably of more concern, has been the question of tape formats -- that is, the question of interchangability, with the proliferation of videotape recorders in terms of the formats of recording. There has been a considerable amount of concern recently for the very real and practical interest in being able to play recordings from one machine to another. I think this is pretty self-evident. On the other hand, the resolution of this question of standardizing tape formats in some other standard than the big one -- the quadruplex standard -- the approach to this is rather pagan; and that is, the gladitorial technique of standardization will be used. The combatants are in the arena now, and they have been clobbering each other with their various efforts to capture the market. And after all the blood has oozed, I think that one or two of the various competitors for the bulk of the small, nonquadruplex videotape market will emerge as victorious; and then the various agencies in the United States that are useful in making standards will standardize upon them; and this, it appears, will be the way the standards will come into being in the area of tape formats. There is nothing wrong with it. It may be a little bit gruesome, but I think we are in this particular position right now.

These, however, are matters that probably are of less meaning, in the long run, to people in instructional television than the points that Ken Komoski was considering here in terms of standards that somehow apply to instructional effectiveness, or, if you wish, predictive instructional effectiveness, if you are unable to determine precisely what is happening to your material. Ken has indicated a range of possible approaches to the creation of standards, ranging from the almost artistic or intuitive technique which characterizes the way that we in school television operate -- and which also, I think, characterizes the way that most educators operate when they are evaluating the performance of classroom teaching in general. Ranging, as he pointed out, from this intuitive approach to the scientific or pseudo-scientific method on the other hand, where a degree of prediction is inherent in the way that one approaches the validation of materials. And Ken pointed out, I think correctly, the road that we are forced to take at this point in time, considering the amount of information that we have about learning, what we know about people, and what we indeed know as professionals about production. The only sensible course for us to follow is to try and use an empirical process, where in a sense we are beginning with the presumption that we don't know, that we're going to find out as best we can, that we're going to cut and fit, that we're going to begin our production with a notion that we want to find out the most general answers first -- that is, asking how should we approach the teaching of a topic, what should our format be; trying out some pilots and getting what feedback we can while it's still possible to make changes, before we commit ourselves to the broadcast schedule and to the one-a-week or two-a-week production schedule which locks us in and removes any further options.

This is a technique of empirical validation which is being used more and more in many of the places where school people are honestly asking the questions, "How good is your material? What are you accomplishing with it?" We have not had any success whatsoever in being able to answer this question in the past; because when you look at it fundamentally, you don't have at the outset a set of specifications for your material, upon which you can construct measures which, when you administer them, will give you a basis of comparison so that you can answer the question with any meaning. But, thank goodness, nobody else in most of the major activities in education can make a similar statement, either. So we are, I think, privileged in instructional television to have at our disposal an approach to the presentation, the thinking-through of instruction, which perhaps is more readily adaptable to this empirical validation process than almost any other aspect of instruction or the creation of instructional materials. And because of this we may find out some things about how good we really are in applying our pedagogy and in defining our objectives, and may find out some very interesting things about what really is important or what is not important in education itself. I say these things because, when you get right down to it, this whole business of standards really rests upon sand, if indeed the purpose of the programs themselves is questionable.

And what can we say here in regards to school television? Well, in a broad sense we're kind of like pharmacists, I think. Somewhere down the line, maybe downtown at the headquarters building, there's a curriculum specialist who acts in the role of a doctor, diagnosing the youngsters and scribbling out a prescription in a good, round, readable hand unlike those of most medical practioners. And this is delivered down to the television people, who, in turn, compound something -- not confound but *compound* something -- which in turn is then administered to the unsuspecting student, who is awfully resilient and is going to survive, I'm persuaded, in spite of whatever we do to him. At any rate, the people in television go ahead and do this; and then if the patient sickens, if the patient doesn't change -- why, we get the blame. If the patient improves, or is more spirited, enjoys coming to school, and perhaps learns something that later on seems to be of value, the curriculum specialist or the doctor will get the credit.

We don't care about this. But what we really do care about is getting a good feeling about how far we can trust the prescriptions that we are asked to fill. So, in a sense, underlying all of the concern for standards, is not just the question of the accuracy of content or its currency, but really its relevance be desired outcomes. This is where, I think, we are in trouble right now, in the question of how well are we doing, how ought we to judge our product. I come full circle, really, because I think we can only judge our product in relation to the kinds of expectancies that have been laid out for television to deliver. And if indeed we are going to make any kind of a profession, I think if we are going to have any kind of growth, we are going to have to deliver television materials which will contribute to the improvement of education, rather than perpetuating some of the weaknesses, some of the older points of view -- which television frequently has been asked to do. So, really, in the final analysis, as I see it, my topic today is premature in terms of standards for instructional television programming, insofar as the prescriptions, I think, that most people in education would like to write are yet to be written.

Nils Wessell, Chairman:

Thank you very much, Mr. Cohen. I found your analogy between prescription-writing in the field of health and medicine and instructional television very appealing, with maybe one major exception. I trust it will not be carried to the point where, using the same analogy, there is created a Federal Food and Drug Administration.

Our third speaker is Dr. Emmanual H. Demby, who is President of Motivational Programmers, Inc. -- as I understand it, a marketing motivational research organization. Among the companies this corporation serves are General Electric, Time, Westinghouse, Cal-Tech, Cheeseborough, and others. In addition, he is director of the research center at Fairleigh-Dickinson University. Some of you have known him as Chairman of the Conference on Popular Culture of the American Association of Public Opinion Research. He has been chairman of many equally appropriate activities and conferences. I understand he has improved on the topic advertised next to his name on the program, which was "On-Line Feedback Methods" -- Dr. Demby.

RESEARCHING ITV

Emmanuel H. Demby

I would like to address myself to some of the problems of instructional television as a communications researcher from another field -- Marketing and Motivation Research. It seems to me that the problems confronting ITV are really not very different from those that we face every day in some of the world's largest companies. You are seeking to persuade consumers, students, of certain facts, information, and you are also seeking to persuade your distributors, teachers, that your way of merchandising information is more effective than was possible before ITV came into existence. I think that is a fair way of appraising the problem. Thus we can say that you really have two communications targets -- students and teachers both. As a researcher, I then see the design for study as really involving three factors -- the students, the teachers, and finally the ITV materials. In a gross way, you can probably apply some measures to ITV materials without ever considering your communications targets. For example, you could run content analyses of what you broadcast, so that you can tell how much information you are communicating. Or you could compare test scores, from classes using ITV to classes not using ITV, and come up with some kind of findings that give you an indication of success or failure. I would like to suggest that this is too naive an approach to the problems that research should solve for you. One of them being -- how can you create optimum conditions for the use of instructional television?

Let us begin by conceptualizing the effect of instructional television on the classroom teacher. ITV is a foreign intrusion in the classroom. It threatens the teachers. It produces the shock of role change, without providing necessary compensation. The average teacher has graduated from college long before ITV could be integrated in the teacher's college curriculum. Thus, even with special training, the average instructor is confronted by the necessity of changing set attitudes and behavior patterns, and accepting new norms of classroom conduct. Research is needed to show which instructors manage to change easily, and which instructors have difficulty in accepting the new norms. For if we say the teacher serves the role of reinforcer of information communicated by ITV, acceptance or resistance to change may influence any findings that attempt to measure the effect of ITV materials in the classroom. The one who has changed easily may be a perfect reinforcer of ITV information. The one who has difficulty may produce a certain amount of confusion among students by shifting the focus of information transmission from the mood of instructional television to the way he has usually taught in the past. And thus, what you really have is a conflict. On the one hand you have this marvelous -- or this poor, whichever it turns out to be -- television program teaching the youngsters; and on the other hand the teacher comes back on the scene and brushes away everything that has gone on before; and you have a tremendous conflict of mood and confusion among the students. The object of such research would be to understand the problem of the change-resisters and provide better ways of producing change acceptance.

We should accept as given the fact that instructional television threatens at least one aspect of a teacher's sense of security. ITV asks the teacher for a share of the credit in successfully imparting information to the students. I suspect that one of the major motivations that brings a person to the teaching profession is the sense of personal gratification that comes when young people begin to comprehend new material. Is this sense of personal gratification still present when ITV comes on the scene? After all, it is no longer "I, the teacher" who taught the student. Now it is "we, the teacher and instructional television". How many teachers are really able to share credits with an impersonal black box? How many instructors feel themselves becoming more and more passive because of instructional television? In how many cases does this factor weaken the teacher's ability to serve as an information reinforcer? Step two, then, in a sound research design would be to learn how different teachers react emotionally to instructional television, especially as it affects their sense of gratification in the classroom, and what is the effect of their reaction on their ability to serve as reinforcers of information. The purpose of acquiring such data would be to learn how to prevent the loss of the gratification motivation.

EMMANUEL H. DEMBY

It would be a very, very practical point here to understand what may be a very subtle, but I think a very important, factor in securing the kind of cooperation you need to make ITV successful in the classroom. The usefulness of ITV is probably increased when the system attacks the innate creativity and experience of the teacher. But this raises a problem. Creativity is a product of a person's ability to bring order out of chaos. The order which results most frequently is one that resembles some prior experience in creating order. For example, a shoe salesman walking into a kindergarten classroom, and finding games and toys scattered about would be tempted to line up these objects as though they were items in a show window. An artist in the same room might find a more interesting arrangement. A file clerk would be tempted to put things in some kind of size, alphabetical, or numerical order.

The problem then, is this. Television is operationally a foreign medium to the teacher. To successfully employ the instructor's talent, we must first show the teacher what is possible in instructional television. If a teacher were asked to participate in an ITV program on space exploration, his first suggestion might be to use still photographs from newspapers and magazines to illustrate the information being communicated, because these things are within his camp, within his realm of experience. But suppose that same teacher knew that there was a library of film clips which would provide anything that was needed for any subject being taught on ITV, then the same person's suggestion for creative programming might lead to an interesting integration of film clips on space exploration with lecture material. To develop optimum creativity, we need to research what it is that a teacher ought to know about, what kinds of materials are available or could be made available to expand the instructor's horizon about the use of instructional television. Our hypothesis is that the greater the teacher's creative state and creative satisfaction with ITV, the better an information-reinforcer the teacher will be. Parenthetically, I would like to say that I have heard a suggestion by the New York Board of Trade for developing a computerized film clip reference library made up of materials from motion pictures produced by American business organizations. This is free materials. This kind of film clip retrieval system is the most practical approach, and a computer could be used very effectively in expanding the horizon, the programming horizon, of ITV.

The second communications target of ITV is, of course, the student.

We may be used to considering the student our primary target, but I am deliberately directing attention first to the teacher and second to the student. What should we know about the student so that we can improve ITV materials? First, we have to understand the frame of reference and the cultural climate that the student brings to class. Once we do, it is comparatively easy to build a bridge from the student to the new material communicated by ITV. I would like to illustrate the point I'm trying to make with a story -- a true story. A teacher was having difficulty communicating Shakespeare to a class of underprivileged children -- by the way, the term underprivileged children also means Negroes and Puerto Ricans. Then, in introducing Othello, she tried a device that caught the interest of the class, and through this device turned them into excited fans of the Bard. She was able to use this because she knew the frame of reference and the cultural climate that brought students to class, and here is how she introduced Othello: "There is this fay chick who was strung out on a blood, and her daddy doesn't like it." And once she had made this kind of introduction to Othello, the bloods had no problem in becoming interested in the story of a fay chick.

Now, does it make sense if we are going to measure how effective ITV materials can be -- I'm not saying how effective they can be -- that we understand the frame of reference and the cultural climate of the students. Not just for the world around them, but also to specific subjects at school. In this paper I am suggesting and (I think Mr. Cohen did the same thing) that it is premature to seek senitive measures on ITV materials at this time, before we understand the universe in which ITV is being communicated. I am also suggesting that the process of research may give us the tools that are needed to create optimum conditions for the use of ITV materials. The design I have proposed is not too different from a design which we might develop for the successful introduction of a new product in the commercial world. ITV is a new product. It is undoubtedly a product with a great potential, but that potential is not dependent just on the process of broadcasting. It is dependent on whether or not the information reinforcer, the teacher, can emotionally accept a new role, and whether or not the student can feel that instructional television is communicating directly to him.

THE COMING OF EDUCATION IN AMERICAN SAMOA

Lewis A. Rhodes, NAEB Host:

As you know, we have had several major concerns in the last day and a half or two days. Some of them have been in the content, some of them have been in the process. Now, in the area of content we have had a concern about being too negative. I've heard quite a bit of this. "We're too impatient," people are saying; "you can't change education. Stop criticizing what we are doing." We -- in a session earlier today -- had wondered if possibly we might capitalize on some of the movements -- you know, yesterday we mentioned we ought to have a button that said, "Technology is the answer -- but what was the question?" We wonder maybe now if we should be wearing buttons that say, maybe, "Electronic Power" or "Learn, Baby, Learn," or probably the one I think I would wear today in introducing our luncheon speaker is "Learning Now," because what is in Samoa is probably the one big characteristic of our medium -- it can provide whatever our goal is now, when you go through your alternatives.

Our speaker this afternoon is an old friend of mine. We went to school together. I was a few years ahead of him when we started. I taught him all he knows about radio. I then left school, went into the service, came back -- and he taught me all he knows about television; and so we sort of have a pool of ignorance. And he has, apropos of this morning's session, a validated presentation, I've learned -- and this is the truth. He tried this out last night on a class of Rich Breitenfeld's at Catholic University, this exact same presentation, slides and everything and the only comment I have -- and this again is the truth -- is the article in this morning's paper. I don't know how many of you saw it. That the students at Catholic University are out boycotting the University today. So I now present the NAEB's man in Samoa, or of Samoa, Mr. James Fellows, Assistant to the President of the NAEB.

THE COMING OF EDUCATION IN AMERICAN SAMOA

James A. Fellows

I'd be a little sore at that introduction if I hadn't given Lew the idea for it. The students are actually out at Catholic University this morning, hoping to get reinstatement for a clergyman who's been dropped from the faculty, whom they are very fond of. I assume it had nothing to do with my presentation; but I at least know that the slides are in the correct order, if they don't get jammed.

This first one is a view of one of the high peaks on the small island of Tutuila in American Samoa in the South Pacific. This is how it looked until 1964. This is how it looks now after the addition of two towers, each of which contains three television antennae which have changed the appearance of Mount Alava and have brought about the possibility of changing the potential of an entire society. Television is not the only new development and opportunity. The buildings you see in this picture used to be the only schools. These were the total educational resources available to any Samoan youngster who attended the schools run by the Government. They had few instructional materials. Teachers who conducted classes in them were themselves poorly educated, under similar conditions and in previous years. Their familiarity with the language and

the content of course materials was very limited. The schools themselves were symbols of inattention. One found there a poorly defined curriculum, inability to teach successfully fundamental skills, an inadequate base for secondary education, and an overall approach which emphasized memorization of material rather than understanding of concepts. As efforts were undertaken to improve the education system, the television towers on Mount Alava were accompanied by modern classroom buildings which took advantage of Samoan-style arthitecture, indicating the need for ventilation and light and the availability of sturdy modern materials.

This is about all there is to American Samoa. It's about twenty-six miles long and comprised of five islands, two of which you see here. Three others are located about 60 miles southeast across the South Pacific. There are approximately 26,000 people living in American Samoa. In 1961 Governor Rex Lee was appointed the Chief Officer of American Samoa by President Kennedy. The Governor concluded after one of his early trips there that educational development would need to be the foundation for any kind of economic development or any kind of social development that will provide for the Samoans more liklihood of ability to control their own destinies. His Washington contacts led him to the NAEB, where he discussed his idea that ETV might be a way of dealing with educational problems in American Samoa. That, in turn, led to an NAEB study of the situation and recommendations that a wholly new educational strategy be implemented, using television to present and distribute the instructional core of the entire school system. This is

the view one receives of American Samoa after a 4 1/2-hour plane ride from Honolulu. Its mountain peaks and shorelines provide many spectacular views; but unless you know what to expect there, it seems very unlikely as you circle this small protrusion of land amid thousands of square miles of ocean that there exists here the world's most comprehensive and extensive use of modern technology to meet educational needs and requirements.

Why American Samoa? The answer, very simply, is right here. These boys and girls can be as much a part of modern life as those who live in this country or elsewhere. They will, in fact, be part of it at some level, whether they want to or not. They will travel because it is possible to travel. They will settle in Honolulu and in our large cities on the West Coast. If they are badly educated, if they are incapable of holding a job, if they are unable to deal with circumstances of modern living, they will, as they have in the past, continue to live in foreign ghettos in our large cities. If they don't travel, there is their own home in American Samoa, which -- if these children are well educated -- can flourish and prosper to the extent that individual human potential is reached.

The Samoans live in over fifty small villages around the perimeter of the islands. The village chief is the central figure in each location. And attractive, well-manicured villages such as this are a sign that the chief is well respected and has high standards for his people. Each village is composed of several homes called fales. The fales are built with thatched roofs, and are open at the sides, and follow the same design that you saw in the schools. The villages are scattered along the scenic shoreline. On the south side of the island a road runs from one end to the other, although on the north side the terrain is too difficult to allow any road building. Access to villages there is by foot over mountain trails, or by boat, when trips are made to deposit food, school materials, and other necessities.

This is an elementary school. Each building contains space for two classes to meet simultaneously. The school site is designed to accommodate additional buildings as school population increases. The first thing a visitor to American Samoa -- and I assume that's the position you are putting yourself in right now -- the first thing that a visitor to American Samoa would observe about the school system is that each

classroom has one or more television receivers, and that for each subject the student has not just one teacher, but two. The one who is in the classroom with him by means of television, and the one who is physically present in the classroom with him. It is this essential quality of the system which gives it its uniqueness. Using educational resources in a totally new and effective manner is what really makes the education system in Samoa effective and unusual. In a report soon to be issed by the International Institute of Educational Planning, Wilbur Schramm describes his reaction to a visit there and to the decision to implement this kind of education program. "It was a breath-taking decision," he wrote. "Television was not being called upon to suplement the ongoing work or the classroom teacher or to help them do a bit better what they were already doing. It was being asked to share responsibility equally with them, help them do something quite different from the rote exercises they had most typically conducted; and, in fact, implement an abrupt and revolutionary change in the system. Rote learning was to be replaced as soon as possible by problem-solving and individual study. The level of content was to be dramatically raised. Higher levels of performance were to be demanded of the students. Thus the exciting thing about the Samoan demonstration is that it challenges the traditional slow pace of educational development, which depends upon educating and training all the teachers in the system. The Samoan plan was a bet that by building native teachers into a teaching team, and using television to multiply the effect on the most highly qualified teachers on that team, something new and dramatically different could be made to happen in that classroom."

When we speak of the education system of American Samoa, we really mean a complex of systems. We are referring to the system of television recording, transmission, and reception. We're speaking of the instructional system that has established a mode of curriculum development and special instructional methods and materials that support that curriculum. And we're speaking of the school system that is concerned with buildings and facilities, classroom procedures, and with supervision and administration. It is the design and implementation of all of these systems into one interdependent operating system that has produced an educational program that is at present unduplicated anywhere else in the world. In the elementary classroom the core of all instruction is the teaching that is done by means of television. The teaching is concerned with ideas, understanding, and insights -- and not the memorization of relatively unrelated facts. Planning, presentation, and reinforcement procedures of all lessons are developed cooperatively by groups composed of the television teachers, representative classroom teachers, school principals, and producer-directors of television lessons. This is team teaching in a very broad sense.

Each elementary school is headed by an American principal trained in elementary administration and education and in the techniques of using lessons that are cooperatively designed and presented. The elementary classrooms in grades 1 through 8 are in charge of the Samoan teachers, trained and oriented in the use of television instruction in the classroom. They are closely supervised in their classroom activities by the principal. The principal in this slide, by the way, is Mr. Miscoske, who is from Oklahoma, and happens to be the principal of the school which is now, The Ladybird School. It is the school that President and Mrs. Johnson visited when they were in Samoa last year. The teaching schedule in the elementary classrooms is planned in connection with the television lessons. All activities in the school follow the same general schedules, both as to time and reinforcement activities. The daily and weekly schedule of lessons and activities and the related classroom instruction materials are furnished on a regular basis from the Education Center. Continuing feedback information from the principals to the Education Center enables the instructional staff to modify and adjust the pace and the content of the lessons and schedules to meet the demonstrated needs and pace of the pupils. Such coordinated feedback also enables -- in fact, it requires -- the principals to evaluate instruction in their own schools on a regular day-to-day basis.

Televised instruction in the low primary grades is demonstrative and participatory in nature. Much of it is nonverbal and it is designed for motivation and emulation. Classroom activities at this level are cued by the television presentations and by the structured lesson plans and guides furnished to the classroom teachers from the Education Center. The specific amount of time allotted to a television lesson and to the coordinated instruction, introduction, and reinforcement follow-up may vary from subject to subject at each level. Precise determination of these periods, as well as the degree of coordination, is one of the main responsibilities of the cooperative planning groups.

The proper use of appropriate instructional materials is a significant factor in an effective school program. Each lesson is produced with instructional manuals for the classroom teachers and, when necessary, worksheets for the pupils. Teachers' manuals contain information, explanation, and directions for the classroom teacher that enables him to coordinate his introductory and reinforcement activities with the aims and objectives of the total lesson in the context of a total course.

One of the objectives of the program is to make it possible to use the

indigenous teacher in a classroom, and at the same time improve the quality of instruction. It is likely that in time Samoans themselves will be able to operate their own school system without importing any significant number of teaching personnel. For the upgrading of teachers currently in the system, the classroom teacher is taught along with the pupils. The teacher is exposed to good English and to good teaching techniques on television, and he is guided by a structured program of daily activities that are outlined for him as precisely as the schedule of televised lessons. His individual success is largely determined by the initiative and enthusiasm with which he implements the schedule and carries out his role as leader, guide, and counselor in the classroom. At the end of the regular school day the principal meets with his faculty and discusses the problems of instruction, subject matter understanding, rate of progress, and problems of program coordination. Telecasts for these daily teacher education programs at the end of the day are beamed to the schools to reinforce and also to guide the work of the principals.

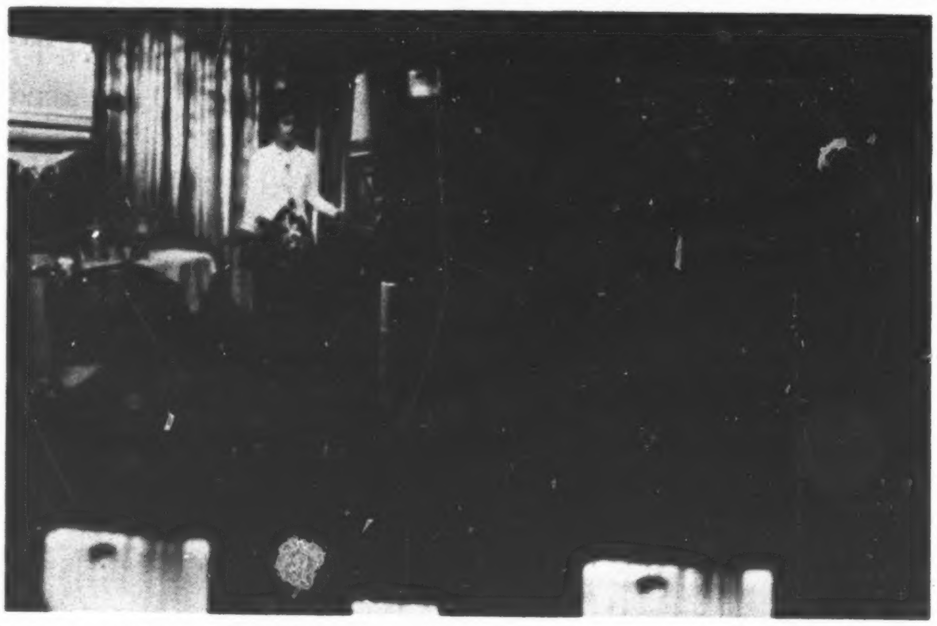
The two-story buildings in the foreground of this photograph are the first high schools in American Samoa. They are supplemented now by two others on the main island and by one on a small group of islands to the Southeast. The view here, seen from a road which leads to a cable car which goes to the top of the mountain overlooks Pago Pago Harbor. The harbor area is the center of commerce for the islands and is also where the government buildings are located, as well as most of the administrative offices.

In the secondary school program in Samoa there are three basic changes involved in the introduction of the new system of education. First, the structure of the classroom is different. They are designed, first and foremost, to accommodate large class groups and are planned to have maximum flexibility so that they can accommodate areas for individual studies or for small special and remedial classes without impairing the efficiency of the instruction of the large central group. The second basic change is the makeup and organization of the staff and faculty. Each of the high schools has an American principal who is experienced in developing secondary curriculum materials, and who is also experienced in the cooperative design and development of instructional materials. In addition to the principal, there are also qualified American teachers who act as supervisors in classroom instruction.

JAMES A FELLOWS

All of the teachers at both the elementary and secondary levels who are physically present in the classroom on a regular basis with instruction responsibilities are now Samoans. They are joined by their teaching partner who is there by means of television. A third basic change, after structure and staff, is the general methodology of instruction in the secondary schools. Previously, instruction has been the responsibility of a single subject matter teacher in a more or less self-contained classroom. In the present system the core of instruction is presented by means of television. The development of the scope and sequence and depth of each course of study is the result of a cooperative effort on the part of a group of qualified persons, and is subject to continuing, constructive criticism and modification. When each lesson of each course of study is planned for the television presentation there is a concomitant planning of drill, investigation, self-study, and other reinforcement activities for the classroom and outside the classroom.

This is the main Education Center, housing the offices of the Department of Education and four television studios which are equipped with high-quality cameras and tape recording equipment and are in constant use all day. Although all lessons are recorded, only a few are stored and kept for later use. Most are played back within forty-eight hours, and then erased. Because of the developmental nature of the program, it is felt that the materials must constantly be studied, analyzed, redeveloped, and represented.



THE COMING OF EDUCATION IN AMERICAN SAMOA

This is another view of the Samoan shorelines, the countryside, which I put in here just to remind you that this is all taking place in American Samoa. The television towers we saw at the beginning, then, are important for what they allow to be brought to the children and the adults of American Samoa. They allow for the structuring of the basic course of study and its dissemination with uniform quality of presentation to provide at least potentially equal learning opportunities for all of the children in Samoa. The quality of instruction sixty miles away from the Education Center can be at the same level as that which is available to students who live in the more populated areas or right next door to it.

The trip to the top of the mountain is an interesting one; and while it has no special relevance to the development of the education system, it might be interesting to show you just a few of the scenes that are involved in the ascent across a shark-infested harbor to a 1700-foot peak. Today there is a cable car for the comfort of the visitors and staff who make the trip. It even has some K-rations in it in case the cable car gets stuck at this point. The cable car has not always been there, and the approach used by two engineers who were involved in the early development and installation of the technical facilities gives you an idea of the fortitude with which they undertook their responsibilities. The fellow on the left is Henry Cronin, who used to work in New York State. Here, they are standing ontop a crate which holds a television transmitter. After having strapped themselves in what they figured was a secure enough manner, they took off for the ride up the mountain. There they are out over the harbor, which, as I indicated, draws a fair number of hungry sharks who are accustomed to feeding off the refuse which is put into the harbor by the tuna factories which you can see on the far shore. Looking back in the other direction gives you a colorful panorama of the Pago Pago Harbor. In the center of the picture the long low buildings just above the ship are the new quarters of the Pago Pago Intercontinental Hotel, propably the most modern facility anywhere in the south Pacific -- which prices to match New York City's finest.

From the top of the mountain the view is always breathtaking. On clear days you can almost see forever, although you would probably have to settle for seeing Western Samoa, which is about seventy miles to the West and North, and the other group of islands in American Samoa that are sixty miles to the South and East. I suspect it's appropriate to end the lesson on American Samoa with the sun slipping off into its watery horizon and a peaceful rememberance of this idyllic scene, but there should be more to the conclusion than a travelogue-style ending.

What, after, all, is important about American Samoa, and why should we know about it? I give you my answer. I believe it's important because it helps us to know that this is not an education system and a television system, but an education system that television makes possible. As such, it is important for its demonstration of how television can be used to accomplish education tasks that would be virtually insurmountable with any of the traditional means. The main educational lesson of Samoa, perhaps, is that a technical system is only effective if it is designed to give an instructional system validity, economy, and efficiency. It must allow for a curriculum to be developed, not just once and for all, but on a continuing basis. It must make practical and operative new definitions of teaching, dividing the work with subject matter and the work with students into two areas of responsibility that are mutually dependent.

Though the setting is different, the problems faced in American Samoa are not unlike many of the difficulties currently facing school boards, administrators, and faculties in our own cities and schools. I take it these matters are being given attention throughout this meeting, which recognizes at last that our real topic is the problem of instruction and educational development, and not merely nit-picking about the inadequacies of ITV. Samoa shows us that the approach to dealing with these matters is not to be resolved by shorter work weeks, better salaries, better unions or more elaborate teacher education programs. Unquestionably, all of those aspects could stand some improvement; but in a new context which can implement faster than most of us can get around to developing them, new assumptions about how teaching responsibilities can be divided and organized -- how human and other resources can be effectively developed, distributed, and multiplied; and how new technical forms of communication can serve human needs to share ideas, information, and understanding. I think that what you find in Samoa helps to illustrate how to achieve these objectives. It does not prove they can be implemented easily, but it does demonstrate that they are valid and reliable. Should you doubt what I am saying -- for about a thousand dollars and a vaccination certificate, we will help you to see for yourself.

THE COMING OF EDUCATION IN AMERICAN SAMOA

Lewis A. Rhodes, NAEB Host:

With a little more about how you can get to Samoa, and for an epilogue and A Word From Our Sponsor, Mr. William Harley, our President.

William Harley:

Well, we have of course been talking a great deal in this conference about innovation and about being revolutionary, and Jim has just shown you one revolutionary approach to the application of television. And the question always arises -- so what? What relevance does it have to our situation here in this country? Let me tell you about a couple of ideas we have. One thing that's in the works next month, as a part of our Ford-supported Project for the Improvement of Televised Instruction, NAEB is taking a group of about a dozen top big-city school administrators to American Samoa to give them a thorough exposure to this system in operation. We believe this experience may open their eyes a bit to new ways and new means of utilizing television in instructional systems back in their own yards. We further hope that because of the prestige of these gentlemen, that there may be widespread contagion from the enthusiasm and excitement we believe will be generated in this group. Moreover, on the basis of the insights and perceptions that they bring away from this experience we hope to develop some principles which will have application to educational needs in some of the -- let's face it -- underdeveloped areas in our own country.

Now, because word of this project has leaked out a bit, there has been a good deal of interest generated; and we are considering the possibility of undertaking a couple of other things. One might be a pay-your-own-way trip for people such as yourselves who want to share this experience and get a first-hand look at this unique operation. And a second, on which we have already had a number of approaches, is to put together a group of people from the business community who would like to go down and see this operation. Or, possibly, to make it more ecumenical, we will put the two together and have a combined group. In any case, we do wish to share this experience broadly; and we would be glad to undertake arrangements to give a number of people who are concerned with making these kinds of innovative approaches to the use of educational television an opportunity to see this unique activity in operation, and profit from this first-hand experience. So, I would just say in conclusion that if there are those of you who would like to entertain the possibility of being included in such an activity, if you will write to Mr. Fellows at NAEB headquarters, why, we will keep you in touch with any developments that may arise along this line.

NEW ROLES AND RELATIONSHIPS IN ITV

Conference Summary

Richard H. Bell

Before going into our final Work Sessions, we thought it would be appropriate to attempt to summarize this conference on "New Relationships in Instructional Television," and to raise questions which you might wish to consider in your final work sessions. This will be a linear and, I hope, sequential appraisal of where this conference is heading, as seen by one person -- a person who has been deeply involved in the planning and implementation of the conference.

The implication has been made at times, that in the education of the future we may not need to rely heavily on books; but as a result of these three days I cannot help but conclude that we do at least need to retain the alphabet. A capsule summary of the conference could be stated as follows:

> "EIA, NAEB, EMC, and MACITVR met to discuss ITV and ETV. We heard about NCSCT, GPITL, IED and EPIE. Concern was expressed concerning VTR's, CCTV and 2500 mHz; and the group took a stand against BTF's and POB's."

Realizing that summarizing a conference to its participants is like describing an accident to eyewitnesses, I shall nevertheless undertake to draw some generalizations from our deliberations.

Each conference has a life of its own; prevailing attitudes, directions, and atmospheres that were not, and could not have been, foreseen by the planners. To me, some underlying themes -- all unplanned -- which have come to the fore at this meeting are (stated in over-simplified terms):

1. Education in America today is not only failing to incorporate modern technology affectively into the mainstream of education, it is failing to meet present-day needs.

2. As presently constituted, American education cannot do the job.

3. If the education establishment cannot do the job, it is time for some other agencies to take on the task of American education.

Now, if by this reasoning we mean that industry, business, State compacts, or the Federal government should do the job of education -- then we are indeed advocating a revolution not only in American education, but in the entire political, social, and economic structure of this country.

Further, if we accept these premises, which have been stated implicitly or explicitly at this conference, then we are facing a larger task than we have yet been willing to identify. If we are seeking to improve our present system of education through application of the psychological insights and technical skills at our disposal, we have a tremendous task ahead of us. If we are seeking to develop an entirely different education system -- different in kind as well as degree -- then the task before us is even greater.

I would submit that our choice as educators at this point lies between bypassing education to accomplish educational change, or working through and within our educational system to change education. I, for one, believe that if we try to change education by going around it, by throwing out the system and instituting another one, we are foredoomed to failure.

You may have noticed that all such discussions as this tend to cast problems in a "we" and "they" configuration. "They" are the educators, and "we" are those who know what they should do. But if "we" -- those people here from industry, education, and government -- are not "they," are not ourselves a part of the education system, then there is little chance for improvement. As outside critics we will do little to change education. As educators working within education, there is every hope that we can bring about much-needed changes.

RICHARD H. BELL

Change is never easy, and becomes more difficult in direct proportion to the size of the organization or institution to be changed. When someone was urging a drastic corporate change on an executive of the American Telephone and Telegraph Company, he responded, "You may be right, but it's a hell of an elephant to turn around."

In order to turn around, or even change slightly the direction of our educational elephant, I think that we are going to need a creative partnership for educational change -- a partnership of education, government, and industry. Though those of you in attendance here obviously would not argue with this point, we have not begun to achieve this desirable amalgam, partly because of misunderstandings on the parts of educator, industrialist, and public servant.

Having served four months with industry after some fifteen years in education, I can bring you reassuring news -- there is not so drastic a difference between industry and education as I had imagined. Both run short of capital before the end of the fiscal year. Practioners in both fields attend entirely too many meetings. And both educator and industrialist are striving to be honest in a society that does not prize honesty.

It was hoped that this conference would help dissipate these misunderstandings and reduce the mutual distrust that still exists to some extent between industry and education.

To a limited extent, basing our judgements on past experience, this distrust is justified.

Some salesmen of educational equipment and materials do sell on the assumption that if the educator is ready to buy -- sell him something, whether he needs it or not.

Some school administrators will buy without knowing whether they need the product or not, but only because money (usually Federally supplied) is available.

I am encouraged to think that both of these instances occur less frequently now than a year ago, and they must become non-existent. It is in the best long-range interests of businessman and educator to buy wisely and to meet specific educational objectives. Only as a company does good in education will it continue to do well.

NEW ROLES AND RELATIONSHIPS IN ITV

The administration and regents of a large university recently funded, contracted for, and built an imposing and beautiful new library building for the campus. As the building neared completion, they realized that they needed an appropriate saying to be engraved over the door, and so, finally, they consulted the head librarian. He readily provided the slogan for them, recommending that they carve over the front entrance, the words, "This isn't the library -- it's inside."

Similarly, we are coming to realize that modern equipment cannot improve education -- but what goes inside can. This realization has made us aware of the hardware-software gap. Once more technology has outstripped content and process, and we find ourselves with machines which can present learning materials efficiently and effectively, but with few quality materials to use in them.

This means that hardware producers, software producers, and educational users must work closely together to insure that valid learning materials are produced and that equipment is purchased in order to bring those materials and the learners into effective contact.

In recent years, educators have condemned commercial producers of learning materials for not producing "software" for the new media. To which the producers have answered that they have tried to produce such materials, but that schools wouldn't use them.

Such statements and counter-statements point up the need for a closer inter-relationship between educators and members of the so-called "knowledge industry". Industry needs to know what the schools need; and they need lead time in which to produce the equipment and materials which will meet school needs. Too often the schools have not been certain enough as to what their present needs are, let alone their future needs. Unless we reason together more effectively in the future than we have in the past, we are condemning ourselves to repeat our past mistakes (such as the teaching machine fiasco of the early sixties), with the taxpayers and the students the losers.

Despite the at-times pessimistic views expressed at this conference, I sense a general ageeement here that:

1. Education must change, and that technology has a vital role to play in a changed educational system.
2. That the schools cannot and should not be ignored, by-passed, or manipulated.
3. That some good work has been, and is being done, in the use of technology in the schools.
4. That much more needs to be done if we are to improve significantly our education system.
5. That a creative working partnership among education, industry, and government is essential to such improvement.

On this assumption, I suggest that in our final Work Sessions we look at key questions facing us, and attempt to arrive at:

1. Suggestions for on-going relationships among these groups.
2. Identification of key areas of need and recommendations as to which groups are best equipped to work toward the meeting of these needs.
3. Suggestions as to possible projects which should be undertaken by whom.

This can be done during the afternoon Work Sessions, which will run for two hours, with no buzz sessions.

For your consideration during these sessions, may I suggest the following questions for exploration -- grouped according to the general topics of the six groups which will be meeting concurrently. These are the questions you yourselves have been raising at this conference this week, as reported by your chairmen at lunch today.

NEW ROLES AND RELATIONSHIPS IN ITV

A. Financing of ITV Programs

This topic relates primarily to the question of program material. Imagination and creativity are substitutes for financing only up to a point, and there can be little doubt that good program material is based on adequate funding. Further, there is a discernible trend in education to demand materials that have been validated -- prepared, tested, re-done, re-tested, and finally released in the knowledge (not the assumption) that students will learn from them. And this involves even more money than our previous methods.

Who can afford this process? Can schools afford to produce large amounts of their own learning materials? If not the schools, can the knowledge industry provide the risk capital to produce these materials, and distribute them on a nation-wide economic base? If so, how can local materials be produced? Will the commercial producers be sensitive to the curricular needs of the schools? And will this process tend to create a national curriculum?

What about quality, which is inseparable from funding? Is there a place for less expensive, lower-quality local television production, as well as for nationally produced, professionally done, high-quality program material? Is this a difference between ETV and ITV? Is there room in our system for electronic "mimeograph machines" as well as electronic "printing presses"?

Will the money flowing into educational television, and -- let us hope -- into Public Broadcasting, develop a mass of educational program material produced for viewing outside the school, leaving the school with meager financial resources for development of programs for use within the school? Is there a need for a dual system, with both broadcast ETV and closed-circuit ITV being used for those things which they can best do?

In regard to the programs within the school, who will do the needed research to help ITV break out of its stereotyped mold and become a vital, experimental force in the instructional process? How will this programming be related to the school curriculum-making process and to school financing? Neither curricular changes nor ample local financing are easy to accomplish, yet both are essential to the educational success of ITV. How can this best be brought about? Which is more needed -- full courses on television, or short modules of learning material? For where the need is, there the money will go.

B. Distribution of ITV Program Material

How will instructional television programming be distributed in the years ahead -- by mail on videotape? by 2500 mHz? by cable? by ETV stations? by satellite? Or by a combination of these? If distribution is by satellite, as many think it will be, who will control the use of satellite time? Should there be a national committee to select what is transmitted to the schools from the Bundy Bird? Or should satellite time be open to free competition, with any producer who desires to distribute his programming being able to buy time for such distribution?

What emerging organizations are and will be concerned with distribution of ITV materials? We have several major national ITV libraries today. What will their role be in the future? What of the many nonprofit corporations devoting their time to the "education market"? Will their role in the total industry-education-government complex be one of distribution, or research, or production? What about regional networks and inter-state compacts? Will these be means of broadening ITV horizons, or of strangling the field in a conflict of vested interests over who uses those program? Will the emerging State Departments of Education have a significant voice in television distribution?

What are the blocks to distribution beyond a single school district? Here we can easily list: 1) lack of user involvement in planning ITV programs, 2) vestiges of the belief that "my school is different," 3) insufficient exchange of information (a frequently-voiced problem at these meetings), and 4) low quality of existing programming. What projects need to be undertaken in this area, and who should do them?

C. Utilization of ITV

At our Keynote Session Father John Culkin reminded us of the student. How well are we planning the utilization of television materials? Is this one of the neglected areas of the total ITV picture? If so, can any group but the school be of any help? Can the State provide utilization experts? Can industry? Who will produce valid printed materials to accompany the television presentations?

Who is researching the area of utilization? Who studies the students? These questions have recurred at this conference, with few clear answers being given. Likewise, we speak constantly of television as an inseparable part of modern technology in the schools. We agree that we cannot isolate ITV from other media. But who is relating TV to the other media? Who is studying the characteristics of each medium from a learning standpoint? Will the education community undertake such research, or must it be done by private industry, the Federally-financed regional education laboratories, or by the schools?

Again, the question of utilization relates to quality. How valid -- in terms of the learner's terminal behavior -- are our ITV programs? Who knows how well they enhance learning; and why they do, if they do? Who is concentrating on the end product -- the learner?

D. Educating Teachers

The leading teachers and school administrators of ten to fifteen years from now are in our teacher training institutions today. Are they learning the uses and values and problems of educational technology? Can a project be mounted to involve the schools of education in a massive program to train these future teachers in the effective use of the technology which they inevitably will face in the schools of tomorrow? Will the teacher training institutions undertake such a task? If they do not do so now, should industry undertake to train the teacher in the use of technology? Would the Federal government consider a joint industry-government-education project to undertake this vast task?

RICHARD H. BELL

E. Developing ITV Personnel

Where will you find your ITV directors tomorrow? Your excellent TV teachers? Your utilization experts? Your educational technologists? Even your engineers who are skilled in working in an educational situation? The corridors of this hotel have resounded the past three days with cries for good ITV practitioners. Can the job be done by Title VII and Title XI NDEA Summer Institutes? Are our colleges and universities launching graduate programs in instructional television, or in educational technology? What should be the nature of such a program? Without skilled people for ITV, all our funding, distribution, and utilization will go for naught.

F. Personnel for The Learning Industry

As industry becomes a full partner in the educational process, where do they obtain the personnel to enable them to provide the educational services needed by education, and for which education would pay? A new type of person needs to be developed for the budding knowledge industry. A systems approach man, an educator, a researcher, a producer -- all these professionalisms must exist either in one or in many persons if these new corporations are to play their appropriate role in the creative triumvirate which we have envisioned. Who is preparing them?

Where is the university with an inter-disciplinary program which involves the schools, colleges of business, education,psychology, creative arts? How is this to be done? Perhaps you would like to design an ideal curriculum for the future educational industry executive? And in the meantime, where will the people come from? Will industry rob education? Will government rob education, and industry rob government? Will we continue to pull the same experienced people back and forth because no well-educated new ones are coming to fill the growing vacuum? Industry representatives here assembled should be working on this issue.

So, we will be talking this afternoon -- talking change, and wondering how to bring it about. And underlying it all, perhaps, is a question as to whether this very exercise in which we are engaging is of value. Are we only talking to ourselves? Do we need to enlist forces outside our narrow circle, bringing in the non-television-oriented educator, and the non-education-oriented public? What structure do we use to bring about change? Conferences are held ad nauseum. Task Forces are formed and dissolved. Reports are written, dutifully purchased by all in the field, and occupy places of unread splendor on our bookshelves. The U.S. Office of Education has set up the ERIC clearing-houses. Much is being done, but which approaches best bring about change? Does industry know? As a new resource in the educational endeavor, can they bring us wisdom as to how you get things done, how to bring about change?

I would urge you to keep this question in mind during your deliberations -- what steps should be taken following this conference? Are there Task Forces to be formed, reports to be written, machinery to be set in motion? And to whom should this responsibility fall? And through what existing or new channels and organizations should this be done?

I do not believe that we have been prophets of doom at this conference. I think we have seen that we have done some good, but that we have not done enough, and have not done it well enough. There is the energy and interest in this doom to proceed with the task ahead in this room. Each of you will leave New York, return to your community -- and do what? This conference can result in the release of great energies across the country, if we leave with certain general directions in mind. I sincerely hope that we will not be discussing the same issues when we meet in 1977 or 1987.

And now, I commend you to your deliberations.

TELEVISTAS: LOOKING AHEAD THROUGH SIDE WINDOWS

James R. Collier, EIA Host:

I'm Jim Collier, Raytheon Company, and Chairman of the Education Section of EIA; and perhaps it is particularly appropriate for me to preside over this closing session of the conference since, as Bill Harley mentioned to you on the opening night, it was a question I directed to him that sort of constituted the beginning of it. Let me say first that I make no apology for having my wife here, because it's one of the very rare opportunities I've had recently to sit down and talk with her.

Like many of you the past couple of days, I think I have found it -- and still do find it -- a little hard not to get emotional about the subject we have been involved in. I'm a layman in the sense of education, but a rather significant part of my post-military life has been committed to a basic belief in, and to an attempt to improve public education. This reminds me of the story of the hen and the hog who were walking down the street past the church. And on the menu board out in front of the church it said, "What can you do in the Freedom From Hunger Campaign?" And the hen turned to the hog and said, "Well, I'll tell you what, I'll give an egg and you give some ham, and we can let some poor soul have ham and eggs." And the hog says, "Well, that's all well and good. For you, that's a contribution; but for me, it's a commitment." So I'd like to take this opportunity to thank each of you for the commitment to this conference represented here in the last few days -- which I think has been a commitment of ideas and exposed nerve ends. And I'd like also to take the opportunity to thank a number of people who have made contributions,to a number of industries that will remain unnamed who provided some financial wherewithal to help the conference to be planned and organized, and specifically to all our speakers, workshop and buzz session leaders who contributed of their time out of very busy schedules to make the conference possible.

I think I would also like to take a few moments to recast or restate, if you will, what this conference has been about, so that there be no question remaining in each of your minds as to why it has taken the course it has taken in this past couple of days -- which I think has been perhaps a source of consternation to some of you. Well, first it's a joint conference, and that's something different in conferences these days, I think. It is a conference where we fully intended to work together; and I mean by that work, not just to listen and to hear other people tell great stories. As Ken Komoski says, it's really a part of our process of trying to empirically validate the whole education system.

We've wanted to explore and to change, if necessary, some of the new relationships that are developing in education today; and we're here, I think, to step on each other's toes, and to slaughter a few sacred cows. We're here to expose the negative aspects of the process, not here to tell the outside world about how good we are and about all of our successes. We're here to expose our weaknesses, one to another, in a broader context of the operational system of which we are a part; and we're saying these critical things, I think, to each other, as one participant said in one of the buzz sessions, not because we care any the less for teachers or ITV personnel or administrators, but because we care just that much more about the learner. And I think it is with very little comfort, as a matter of fact, that we have concluded that our problems are endemic to education as a whole; but the nature of ITV is such as to draw the fire and the criticism and to attract attention. And this reminds me of what the late Henry Luce said. He pointed out that it was the nature of man to continue to strive for a system of order; but unfortunately his new knowledge and his new technology kept tearing down this system of order and his frame of reference, leaving him without guidance. He said that Adam ate of the apple, and the world was never the same. Knowledge changes, but wisdom lingers. So what is this lingering wisdom?

The other purpose of this workshop, which we want to make certain that everyone understands, is to do something constructive after the conference, and not just to go home having listened to each other and rubbed each other raw. In order to help us try to synthesize the "wisdom", the Educational Media Council asked a number of the people here at the head table tonight to constitute a conference evaluation committee; and they have been attending various sections of the conference, and will meet tomorrow morning to begin to chart a course to some kind of constructive action that might result from the conference. I'd like to name the members of that committee. You all know them, anyhow, but just to say, Charley Schuller is the Chairman; Ben Edelman is on the committee;

Dick Brown is on the committee; with Ken Komoski and Ed Cohen, who couldn't be here tonight.

One other thing that the workshop has said to me at a particularly appropriate time. It points out to me, I think, the necessity for the larger role and purpose for the Educational Media Council. I think we are badly lacking an organization with the kind of overview that EMC represents to try to do something about the kinds of problems we have been talking about the last few days; and we must, I think, do something to strengthen this organization and permit it to do the kind of job that's urgently needed. I would like to recognize, of course, Harriet Lundgaard, who is our Acting Executive Director at EMC; and our Conference Coordinator, Borden Mace, whom you've met throughout the conference, and who did so much to help pull it together.

Well, it's clear to me that we can't achieve the larger measure of what this workshop has indicated is required without a greater sense of national purpose and urgency. Stated more simply -- where is this leadership going to come from that's required to do this, and where is it now? It seems to be so lacking. How can we obtain it? How are we going to get the kind of leadership represented by the Harry Trumans who override the FCC to make certain that we do, in fact, do something? How are we going to get the kind of leadership represented by the superintendent of West Hartford who says, "We're going to do it. We're going to do some of the new things. We're not going to spend our lives studying it to death. We're going to do it". We have to have the leadership. The real question is,can we stand the heat in the kitchen? I think the question here is, "Can we sort out the wisdom that remains after all of the knowledge has changed?"

TELEVISTAS: LOOKING AHEAD THROUGH SIDE WINDOWS

Well, the main event of the night, of course, is our speaker, Dr. Licklider; and I think Dr. Licklider is a particularly appropriate choice for this conference. He lives at the same time in the field of education, and in the field of industry. In my view he is evidence of some of the hopeful signs of our new relationships that are beginning to form between industry and education, and to some extent Government, whose financial support makes a lot of it possible. Dr. Licklider is currently consultant to IBM, to the IBM Director of Research, and is a Visiting Professor at the Department of Electrical Engineering at M.I.T. His work has been mainly in experimental psychology, human communication, and on-line computing; and between receiving his Ph.D. Degree in psychology from the University of Rochester in 1942 and joining IBM in 1964, he engaged in wartime research at Harvard; teaching and research at Swarthmore, Harvard and M.I.T.; research and administration at Bolt, Beranek, and Newman;and Program Development and administration in the Advance Research Projects Agency of the Department of Defense. Dr. Licklider has been President of the Accoustical Society of America and the Society of Engineering Psychologists. He received a Biennial Award of the former and the Franklin B. Taylor Award of the latter. His Libraries of the Future, published in 1965, deals with on-line information networks. Dr. Licklider said to me that he was thinking about talking to you tonight about "TELEVICISSITUDES", but being as unstructured as this conference is, I'll let him make his case as he goes along. Dr. Licklider.

TELEVISTAS: LOOKING AHEAD THROUGH SIDE WINDOWS

J.C.R. Licklider

Thank you very much, Jim. Ladies and Gentlemen and colleagues, it's a great pleasure to be with you here tonight,and I'll try to tell you why in a minute. First let me tell my new friend Charley here that his evaluation stops now. And the reason is simply that I have been double-crossed. When Jim Collier approached me before the cocktail hour, he said, "Here's what I plan to say -- let me see what you plan to say." And I gave him my paper and he gave me his. And he's read mine, and I can't find the glasses that will let me read his -- but I enjoyed it very much.

Now, let's see where we are. This is the end of a meeting that was probably very exciting, very frustrating, both, to you. It was very exciting and not at all frustrating to me. It's the kind of meeting that I think is just right. These meetings that are "after the battle has been won", where everybody is jubilant, in a victorious mood, slightly high -- well, they're not so good as this kind. And the meeting in which the situation is so totally unstructured that the members of the various communities who come together in the hope of cooperating don't know anything about one another at all -- well, those are kind of embarrassing. This one, I think, is a little in between. My best advice, I guess, if you will permit my presumption in trying to give advice, is to adopt a very long time constant. First, because, as you well know, people overestimate what can be accomplished in a year, and underestimate what can be accomplished in ten. It seems to me that in my own life and the lives of my colleagues, whenever the time constant shortens down to day-to-day and week-to-week reinforcement, the situation is frustrating; but if you look at what happens, what progress is made over a longer time, you can be happy, you can be buoyant, you can feel the glow of accomplishment.

Now, this is the field, this is just absolutely the field. Education and technology are starting to come together, I'm sure that a couple of my colleagues think I'm a terrible cynic and pessimist, but I do feel that a lot of which our new technology has done for us is to put us together in cities that are too crowded, with not very clear clean air to breathe, with frustrations of the sort that -- if you have eaten around town these last few days, certainly not in this hotel, but around town, I'm sure you know about them. And here all of a sudden we come to what I think is technology in the military. It has made great strides, but not of this positive sort that technology and education together are going to try to accomplish. For the first time it seems to me we have a chance to put the approaches and the knowledge that technologists have in their hands into a venture that is, in every sense of the word, an exciting challenge to all of us.

And, now, I'm not going to make a moralistic speech; but I truly believe this, and I think most of you do, so what I would like to do is to examine a few generalities, and then settle down to what I think is a profitable enterprise. And that is just to describe images that come to mind, ideas that I think are parts of the whole. Now, I want to do that because I am very suspicious of any one who at this stage thinks he can give a map or a blueprint of the whole enterprise; but I think we all ought to be interchanging ideas about how the parts ought to work, and some changes that maybe should be made. Someoody around here tonight told me about educational change, and why it is was so hard to come by. He said after you spent the educational dollar, there is very little "cents" left.

Now, it seems to me that if we settle right down to television, it has a lot going for it. It has a character that -- how can I say it? -- it appeals directly to perception, and unless one substitutes for a picture and images on the screen strings of alpha-numeric characters, it has a direct appeal. Almost everybody has at least some of the equipment for appreciating pictures. You shouldn't be too happy about that fact -- I understand that if you go to Africa with a picture and show it to a native who has not been in contact with pictorial civilization, he doesn't know how to look at it. He doesn't know how to look at the picture. He looks at this thing; and if it is a picture of himself, he doesn't recognize himself. It's something you hav to learn, to see pictures; but in this country, at least, everybody comes equipped with that skill, whereas relatively few come equipped with any real apparatus for handling words and sentences. So it has that directness but more than that -- perception, from a psychologist's point of view, has a preferred status as the doorway to cognition.

And if you think awhile about the difference between seeing something work, seeing something complex unfold in a dynamic pictorial display, and being told about it in abstract terms and having to put together that thing by thinking and constructing cognitively -- well, they're just totally different. One is a direct, immediate approach; and the other is a very difficult complicated thing. The old expression "the picture is worth a thousand words" ought to come into this discussion somewhere. It sums up some of what I'm trying to say, but it also brings to mind part of the problem: a picture is as hard to deal with as a thousand words, insofar as at least some of the technology we're talking about is concerned. And I guess the point I want to get to is that in the school room, in the college, and in the university, our processes become so heavily conditioned, so heavily dependent upon words and sentences and number to some extent -- to high abstractions -- that I think we ought to think very hard about how we can take advantage of the concreteness of the pictorial, the two-dimensional or in some instances the three-dimensional modes of communication.

I was very happy to understand in this meeting that almost all of you have the feeling that television itself is a wonderful medium. It is not to be thought of as the medium, the only one; but is to be thought of as one of several media which ought to be integrated together into a system of communication in the interest of education. And certainly what I had mapped out to say to you tonight was mainly a plea to take that point of view, and to think of instructional television as a tool in a tool box or an armament in an armamenterium. But I'm not going to develop that theme. I understand that almost all of you accept that and agree to that, so I want to come through a rather different door into this discussion.

Jim, you said you were afraid you reacted emotionally to some things about this meeting. And I want to say I don't think you should be "afraid" that you reacted emotionally; you should be thankful. That emotional reaction to subject matter of any kind is probably an extremely basic thing That the essence of the problem we are collectively trying to face is tinged with emotion and stems from motivation. That we ought to focus on the problem of how to inject emotion, motivation, reinforcement, reward, into the education of students and people -- into people enhancement -- and that if we were to accept that as a statement of part of the necessary process, then we ourselves ought to be conditioned to undergo a considerable amount of frustration, and to be tolerant of delay in accomplishing the goal. Because there is in this present time of our civilization and our society, a pretty sharp line of demarkation between emotion and affect and motivation and normative things, on the one side, and the rational, technological, engineering things on the other. Few of my engineering colleagues really know how to cope with emotion and drive, and few of my wife's friends in the world of the community theater and so forth are really very well set up to provide the tools of education. So, I think we are going to have to work together, despite a certain difference in language; and we're going to have to overcome considerable frustration.

I would like to be able to set forth some articles of faith that would possibly help you, and certainly help me, weather these years in which we are going to have to rely in part on faith. But I m not very good at that sort of thing, so I want to lay out a few thoughts about the kind of interaction that we should have. By the "we" here, I mean now, the people in the world of education and the people in the world of technology.

Now, the development of cooperation between communities is a very complex and little-understood thing, but something is known about it. I've had the great experience of living through a couple of these. In the first one, which was in the field of speech compression, it was necessary to get linguists, acousticians, physiologists, psychologists, phoneticians, and so on -- people from diversified fields -- and electrical engineers, all together, because no one group had all of the necessary knowledge or tools for handling the job. In the first meeting, a very interesting one, each of us left thinking, "Oh, those fellows in the other fields are certainly not very bright, and they have very little to contribute; but, you know, after we had a few drinks, that one fellow, he did have some good jokes." So there was just enough that was positive about the experience to bring about a second meeting; and it really took three or four before there were any restructurings of the groups, and before any linguist believed enough in an electrical engineer to go spend a year's sabbatical where there was a speech sonograph that he could use.

Now, this is all quite a few years back and the technology has changed much. But I do think that one of the things that is going to have to happen before we go very far is enough personal acquaintance, enough exchange of emotion, and enough kind of corny dedication to the great goal and the great challenge to bring about some restructuring, some moving of people, some changing of groups. And I would make that remark to my Government colleagues here (I used to work for the Government so let me call them colleagues). Part of the government's mission here is to do everything possible to bring about a consonance of value structures and of motivations and goals so that the groups will work together. And it's fairly easy from the Government point of view, from the Government position, to set up some rewards in such a way that cooperative behavior will be paid off better than noncooperative behavior; and I commend that to your thinking. Its' part of the engineering of social change that we are all hoping for.

Now, interchange of ideas, images, formulations, progressive definition of goals come about in part in meetings -- and here I would reemphasize the social aspect -- partly in writings, but unhappily there is a great prerequisite of commonality of language in writing. Best, I am sure, is day-to-day interaction. So I would say to the evaluating committee and those of you who are going to organize further endeavors along this line, that in my view the crucial thing is to set up some kinds of working groups, or task forces, or what you will, that will bring the people from the two or more communities together, if not on a daily basis, then on a weekly basis, to get lots of interaction from this year and the next one; because that is so much more effective in establishing understanding of the jargons and languages, and of permitting development of the goals that constitute the challenge.

And this is going to be an awfully corny speech; but the trouble is that I believe what I am saying; and it is very hard to get away from saying it if you believe it strongly. One of the things that seems to be most important is to live down, to suppress, the attitude,the statement on the parts of some of the people in organizations, that we already know how to do this thing. To build up a great tolerance for trial and error, for creative daring, without assurance that this thing will succeed; and to develop a strong interplay between innovation on the one hand and evaluation on the other. What I'm trying to say is that, as I see it, we are going to have to go through a lot of circles in a fairly tight helix to bring about the advancements in education that we want to bring about, and that anyone who lays out a plan now and says, "Follow this plan and we'll get there," is probably misleading unless his plan is just a set of heuristics or guidelines for how to get the educational and technological communities to work together properly.

In industry, and in the world of government, the world of education, there is a lot of emphasis on careful planning and, in my view, not nearly enough on contingency, upon fast response to promising breaks, upon dropping a program in the middle and not losing your funding. You know, if you are smart enough to see that something won't work, you shouldn't have to carry it through the whole contract year. You should be given permission to try something else daring. I would like to urge that sort of thing, and to say a word in favor of exploration, without saying a strong word against experimentation. I'm a little unhappy at the kind of semantic violence that goes on when people propose -- you know, it's an old expression, "I want to take a look at so and so but the proposal says I want to do an experiment about so and so." I think we ought to reserve the word experiment for something that is carefully designed and will come forth with a reliable conclusion, but we shouldn't shun the explorations that chase around through the multi-dimensional domain of education, and try to find out where the grain of the problem is, try to find good lines to follow up.

And now, finally, in this moralistic part of my speech, I want to say something about creativeness,about creativity, and about getting rid of, free of, the tacitly accepted constraints that one sees on every hand in almost every walk of life in our society, and certainly in education, and certainly in technology.

Now, in instructional television I think there is a strong tendency to start with the idea that you are going to display on a screen somewhere at a distance -- that's the "tele" -- what is picked up by a camera somewhere else. And possibly the implication is it will be in real time -- live. Now, instructional television has gotten rid of most of the constraints contained within that oversimple discussion, that oversimple discription. Of course we think about playing back at a different time from the time of recording, and of course we think of doing it in a schematized way with editing instead of full reproduction. We can transport or transmit the signal. We can get rid of the color, or put color in; but I think we want to go farther, and we don't need to pick up the original signal with a camera at all. It can be constructed as by Walt Disney or as generated by a computer. It can be synthesized,in short. It need not be a single display. We've seen wonderful effects with many screens all being projected upon at once, almost as in a "happening". The educational value of that, I suspect, might be quite great. There is something about perception that perceives that way -- why not try displaying that way? And in particular -- and this I see very little -- why not display the pictorial image and the abstract symbolic description of the same process simultaneously, with the two tied together so that the observer can take in, in a correlated way, the perception as seen naturally and the explanation as worked out scientifically.

I haven't missed my plane yet, but I want to announce that that's the end of my moralization. You are very silent, and maybe it's wrong of me to take the tack I have taken; but the fact is that this field that you are working in is just a fantastically great challenge, and I think that you should be embarrassed to be so lucky. Now, I'm embarrassed to be so lucky, to be here, so I'll finish with as many as you'll tolerate of the following. These are just little descriptions of ideas that I think are worth while having in mind.

The first is a jigsaw puzzle-solving machine, and I think this helps me think about students. Imagine a machine that can contain inside it some parts of a jigsaw puzzle laid out on a plane surface. And this machine is equipped with some batteries to motivate it, and with an apparatus for looking around in the environment for pieces that might fit, and an arm to pick them up and put them in, and see if it can't finish the jigsaw puzzle. Now the reason this is in some dimensions an apt discription of a student appears when you consider what would happen if you put into this machine only a few pieces of a very large jigsaw puzzle, and set the machine to look through the environment for parts that would fit. Since there are few parts there, very few parts fit against anything. It's unlikely that there will be a match; and, in short, the batteries run down before there is a success, usually. On the other hand, if you started out with the problem scaled to the capabilities of the machine -- that is, several parts there already, and only a few missing, then it's at least possible for this thing to be successful before its batteries run down. And let's assume that the machine gets batteries charged on each success.

At home my wife uses the phrase battery-charging often about our kids and about me, too: "Now, what you really need is battery- charging." When my son comes home from college looking kind of blue, she manages to send him back all pepped up,charged up again; and it's something about her skill in posing problems that are within the problem-solving potential of my son. And I think thinking about this little jigsaw puzzle machine will force that basic fact. A lot of the design of instruction is simply in guaging the capabilities of the student and the difficulty of the material, and designing the situtation in which he will be successful often. Fred Skinner has made a great point about usually being successful. He says never let the ratio of reinforcement get down below about 85% or you're in trouble. And coaches of prize fighters know about this. They try to bring along a young fellow so he'll never get knocked out; and, if possible, never get defeated. It's always just finding somebody who is a little less good

than he, and it's the same about the problems that you should feed the student.

Well, the next image in mind is the learning servomechanism, and this really has a message in it about instructional television. A servomechanism, of course, is a thing that is given some picture of what it ought to accomplish, and some picture of what it is accomplishing; and it's set up in such a way as to minimize the difference between the two. Instructional television, as it is usually constituted, doesn't have much feedback. Now, you show the picture to the student, show him what he ought to do, what he ought to learn, or what the situation is; but there isn't much taking of a signal out of him and comparing it back with the original to see whether they are alike or not. Not much measurement of progress. And many of my thoughts about what to do to television are thoughts about how to introduce this missing part into it. One of the thoughts here is that it's absolutely important to understand the motivational structure of the student -- but how do you learn? It occurs to me that you might hook up a television situation with some simple scoring device the student could operate to indicate, at each stage of the display, what he is interested in, or at any rate whether he is interested, and to what extent. And by observing the responses in many students to much material, you might be able to work out a way of analyzing motivational structure.

But then quickly to another image. I saw a movie made by computer at Los Alamos that I wish you could all see. It is a movie done in a kind of schematic, two-dimensional way, of what happens when a dam breaks and the water rushes out of the dam, bumps into the wall, flows over the wall, hits a retaining wall, bounces back, and so on. Now, this movie is absolutely beautiful, because it's done in dynamic, detailed form, as though Walt Disney had spent millions making the thing. It lacks a few features, however. Nobody watching understands why the water does what it does. You get some hunches, and you see what the water does, and it's very complicated and very beautiful. But what you'd really like to do is to participate in this thing more, to interact with it, to try out your ideas.

Now, this is too advanced hydrodynamics, too advanced to be a good example; but let me take a simpler one. I once programmed on a computer a little thing that would display on a cathode ray tube a parabola, and beside the parabola it had three scales; and up above, the equation. The equation of course was $AX^2 + BX + C = Y$; and there were three scales, one for A, one for B, one for C. And by pointing at a scale with a pen you could set the coefficient -- A to whatever value you liked, B to whatever value you liked, C to whatever value you liked -- and immediately the graph of the parabola took the form that it should have with those coefficients. Also in one version of the equation those coefficients were plugged in, so you could read off it was $2X^2 + 3X + 4 = ?$

Well, now, here is a thing that turned out to be almost magic. It's very simple; but since the student can operate upon the thing he is looking at, and jiggle A up and down, and watch the parabola go like so, or jiggle B and watch it go like this, or jiggle C and watch it go this way -- a kid who didn't know any mathematics, even any arithmetic, a grade-school kid, could quickly get a feeling for what goes with parabolas. And the same thing can be applied to almost anything in mathematics, in logic, even in organic chemistry, where you have structure. Wherever there is structure in the material, this interactive feature which is what I want to emphasize very strongly is, I think, just magic. And I hope we will figure out ways, although it seems impossible at the outset, to make television an interactive medium.

J.C.R. LICKLIDER

Now, Fred Friendly says live is the name of the game. He emphasizes one aspect -- liveness -- as being there immediately at the time the thing happens in the real world. And that's very important in some places. My hobby, interactiveness, I think is very important in some places. The full dynamic quality of the picture with color is very important sometimes. If you are trying to show somebody how a very complicated thing works, it's best that he should see it in all detail and watch it move. But part of the game here is going to be to learn to make an engineering compromise. As people in education try to work with people in technology, they are going to see more and more that engineering is compromise. So what are the things we can compromise in our field? We start off with a pretty good resolution on a TV screen -- not very good, but pretty good. We start off with full dynamic capability -- the picture is a moving picture. We start off with color, in the present technology. We start off without interactiveness, without a high degree of selectivity -- not many alternatives that you can turn to. We start off without multi-trackness for instance, which was a commonplace in programmed instruction -- and we all learn to make compromises among those.

Now, I can see the full color, live -- yes, even live -- presentation. As the inspirational element, here we get a great man in his field to make an introductory talk to motivate the student, to show him what it would be like if he really became a physicist, or really became an organic chemist, or something, and did some good. But the detail of what goes on in a protein molecule, you can't show that way. You've got to schematize. Sol Levinthal up at M.I.T. makes beautiful pictures on the cathode ray tube of protein molecule structures; and he's got it fixed so that with a light pen he can go in and move them around, change things. He's given up color, he's given up the full pictorial quality. He's gone down to line drawings. They're still dynamic, and they're interactive; and that's good for a different thing. He can solve problems that way that you couldn't solve any other way.

I can see a situation in which we have a strip of dynamic full picture that recycles. Let's suppose we are trying to teach somebody how to hit a golf ball. Well, here's a pro of the same build, same size and all, hitting the golf ball. Oh, one of the tacit assumptions was real time -- let's run it slow, let's run it fast, let's run it at various speeds and let the person see what the pro does. But of course the student has no language, really, for understanding what pro's do, so when he tries to do the same thing, it is, of course, imitation. But now imagine that the student is instrumented. He has accelerometers all over him so that when he does the same thing, after a little delay he can see his diagram and the pro's diagram run off together, maybe with some measure of the discrepancy between the two. But we go through this repeatedly; and here I think by making different kinds of compromises, and switching back from one mode to another, we can make a miraculous way to get people to hit golf balls like they've never been hit before -- by the laymen, at any rate, let along the pro's.

The same kind of thing for speaking. You know, if you try to learn a foreign language after you are mature, you just cannot learn to make the phonage right. You make the best approximation in your old phonemic system, but that's largely because your ability to listen to what you say has been so distorted by training that you can't hear really what you say any more. You almost have to look at it. But we can rig up a scheme using video presentation of the vocal tract, and so on, to let you see what ought to be; see what is; see the discrepancy between them; and, I think, in short order make Americans speak foreign languages in a way that will put us back into the good graces of the rest of the world.

Well, there are a couple more things that I really want to talk about, one of them is the fact that, in my opinion, we don't even know how people look at television, how people look at pictures -- and this is a challenge to you. I'll bet most of you have never seen a television picture, or any other, in a mode that I think is commonplace for artists. At least, it is commonplace for artists when they look at paintings. And the story goes like this. You're looking at a plane surface, or an approximately plane surface, when you look at a video screen. When you look at a picture of any kind, you look at a two-dimensional surface; but you look with both eyes; and you look typically from a movable point of view; and your depth-perception apparatus is working for you. And what is it telling you? It's telling you you are looking at a two-dimensional picture, not the real thing. How many of you ever have looked at television or a picture of any kind, and seen the real thing? It's absolutely startling. To see it, it's best to close one eye because that kills your depth perception, which is only working against you in this case, anyhow. Hold your head very still; because the dynamic, the kinematic depth effect is very strong, and you shouldn't be seeing from various points of view. If you do both of those things, and possibly also occlude the perimeter to get started at this, either sooner or later --

some people quite later, like after two weeks of trying -- they see the thing either suddenly through a new mode, or drifting to a new mode, in which it looks as though there is a real three-dimensional thing there. It's in depth. If you do this to a TV set, it typically looks as if it's back there on the other side of the box somewhere; and you're looking through this little window at it. Well, it's a startling thing to realize that the whole perception changes in quite a few ways; and yet among my friends very few even know about this, except for the artists, who say, "Oh, yeah, that's the way we look at our paintings." It is indeed a thing that makes paintings much more fun to look at.

Well, there are probably other things about modes of perception that are important. This one, I think, is very important, and yet it's almost unexplored in our field. Now, the two things that I must talk about are these two images that come to mind, and these are controversial in respect to the question of how far distant into the future they are. Part of this problem was talked about this afternoon in very interesting discussion sessions. First, let's suppose that there is a bibliographic data base -- if the word isn't already being copyrighted, maybe videographic would be better than bibliographic for these video materials -- which any one of us from his home institution can interrogate through, let's say a teletypewriter or an ordinary typewriter hooked up through the telephone lines; and by entering some descriptors that say what kind of thing he is interested in, get back bibliographic listings of what's available, and the names and addresses of the places where they are available. Now this kind of thing, you know, is a simple switch on what's being done every day now with remote terminals and computers -- the people working through the telephone system to a distant computer which has a data base associated with it. So this can be done, all right; and, I was happy to learn, there is much effort to index the materials that are on hand.

So, the, the other half of this problem would be the question of distribution of the content to the people who are to use it. It seems to me that usually you want to see these materials. You're not sure you want to show them to a class; you're not positive you want to use them; but you want to look them over; and then, if they're good, you probably want to modify them some. So think of the dream that's now called the Educom dream -- that is the Interuniversity Communications Council, which is excited about the prospect of getting an electronic network to interconnect the universities and colleges. And I can see this progressing also to the secondary school in such a way that things like video films and strips can be disseminated through microwave or coax cable or, in due course, through satellite communication, perhaps, say during the night hours when the things aren't so much used, so that in a turn-around time of fifteen minutes you can do your bibliographic search, and in a turn-around time of a day you can have the material.

Now the third part of this dream calls for equipment nobody can sell you right now, though there are plenty of engineers who could build it for you -- computer-assisted editing of video materials. I have never done this in video, but I'm an old audio fan and have spent countless hours piecing together magnetic tape of audio -- anybody that has ever done that realizes that what you really want is to think above and beyond the process, forget the shears, what you really want is to get rid of the thing that sticks the film together, and think about it abstractly. You'd like to run off something and name a point of it; then go back and run past that slowly and name exactly a point; and say, "fade there" or "cut there". Well, with the computer techniques your tape program could be put together by a body of engineers now; you could take the pain out of editing. So I envisaged this triumvirate of schemes which would also put quick-turn-around, local compilation of video into the hands of educators.

Yes, into the hands of educators. That's what I think the technology ought to do. I think it ought to put a lot of flexible stuff, a lot of Tinker Toy and Erector Set parts of the instructional technology into the hands of educators, and then develop this tight-loop circle so that they can say what's wrong, the engineers can fix it, and come back and say, "Is this any better?" -- and do that on a turn-around time of weeks instead of the months or years it has been taking.

Well, now, I appreciate your listening to me this long. This has been a very serious speech. The reason is simply that the way our society adjusts to new ideas is a very painful thing. We pride ourselves on being Twentieth Century America, and yet we're basically just a bunch of puritans and buggy-drivers. And if somebody comes around and asks us what we really need, when he sees us having a hard time plowing those furrows out in the field -- we say we need a stronger mule. It's very frustrating to see what happens; but it's frustrating only on this day-to-day, week-to-week, and month-to-month basis. On a year-to-year basis it isn't frustrating. I have recently lived through a thing called the advent of time-sharing and multiple-access-computing. And four years ago people were saying, "You're out of your ever-lovin'mind -- that'll never happen" -- and then giving all the reasons why it was not feasible. And now most universities in this country are ordering the thing; there are several that run; and it's just obviously the greatest way of using a computer that ever happened. At least, so I think.

Now, this is happening in instructional television, too. Give it five years or ten; and education, including ITV, will have been absolutely revitalized and revolutionized. But I don't think there is going to be a single week or month of the whole time when you'll have any idea how fast you are really progressing.

James Collier, EIA Host:

Thank you, Dr. Licklider. I think the message here, to me at least, is that hearing this affirmation from someone who is extremely close to both the educational process and technology on its very leading edge should make us realize that in fact we do have opening up to us -- not today, but over the next year and the next year -- a range of technological assistance which we find difficult to conceive; and it's up to us to try to begin to reask the questions that we asked today. If that is true what are the institutional, structural alignments of responsibility? What are the implications for the problems of financing, program preparation, distribution, validation, and the training of personnel necessary to deal with it? And it's only if we genuinely address ourselves to that type of question in the context of what is in fact possible (while at the same time of course, trying to do the daily old drudgery task of doing a better job with what we've got), that we will ever really make technology serve us in the way we want it to serve us.

I guess no conference or no speech is complete without at least mentioning McLuhan -- who has said that of course we can make technology serve us, if we make the conscious attempt to understand it and make it serve us; but if we don't, it will in fact modify us in a way which we find difficult to understand. I think that is our big task, to try to look at that future and today's problems, our current structures and ways of doing business -- and find newer, better ways to be prepared to take advantage of what we can have if we only want to have it.

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